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4. Appendicitis Peritonitis, and Abdominal Abscesses.
5. Other Painful Abdominal Diseases Requiring Surgery.
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Medical Education Forum includes editorials, letters, comments, criticisms, and excerpts from important addresses.

News from the Medical Schools: Material for this section should be transmitted to the News Editor, Mr. Tom Coleman, 2530 Ridge Avenue, Evanston, Illinois. Announcements of major faculty and administrative appointments, news of distinguished visitors and significant educational developments will be included. It is not possible to publish notices on grants-in-aid for scientific research.

Items of Current Interest: Audio-visual news and notices from national and federal agencies appear in this section.

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By **JOHN L. MADDEN**, M.D., F.A.C.S.
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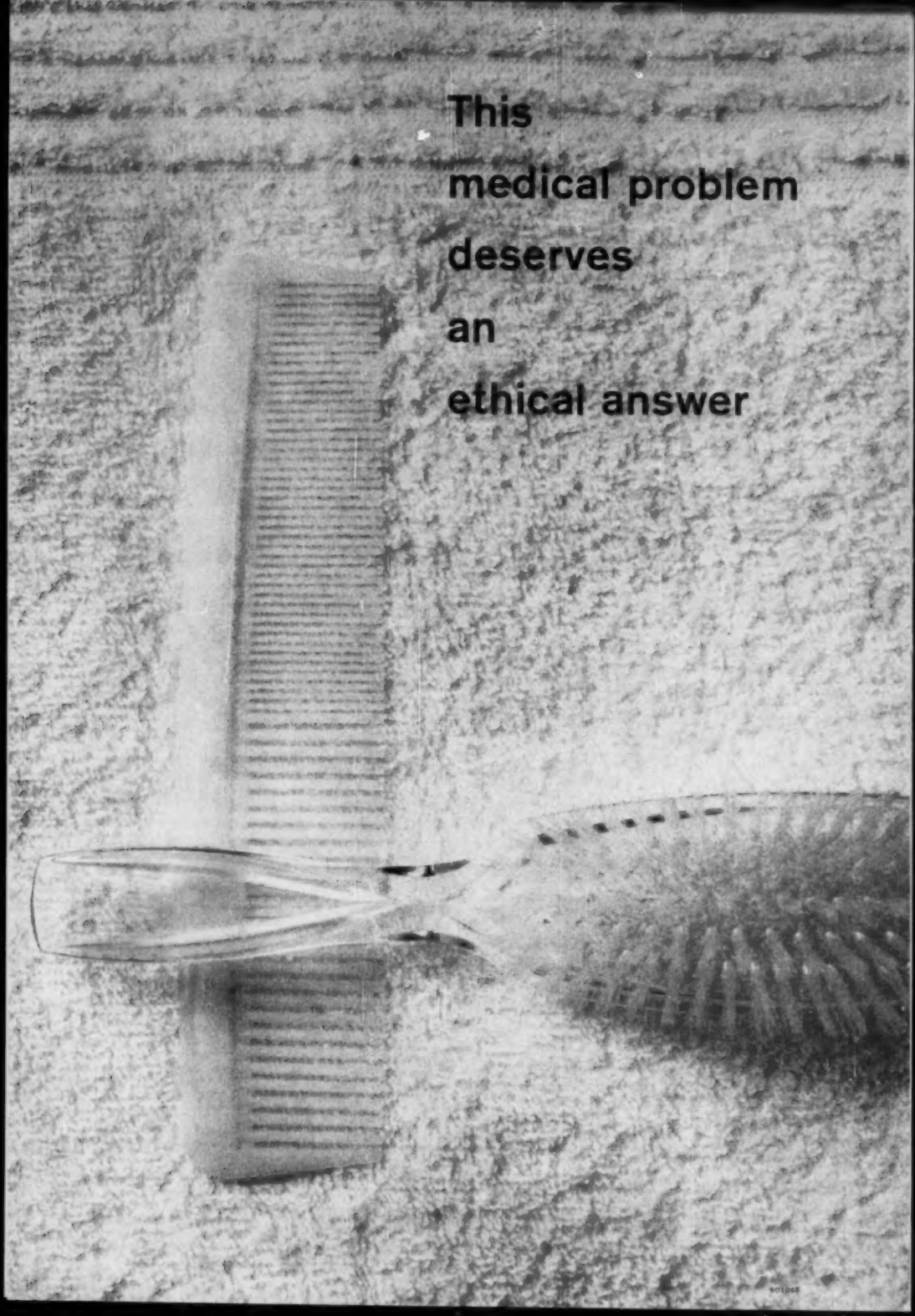
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INTERNATIONAL MEDICAL ASSEMBLY OF SOUTHWEST TEXAS, Gunther Hotel, San Antonio, Tex., Jan. 26–28. Mr. S. E. Cockrell, Jr., 202 W. French Pl., San Antonio, Tex., Executive Secretary.

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WESTERN SOCIETY FOR CLINICAL RESEARCH, Carmel-by-the-Sea, Calif., Jan. 29–31. Dr. William N. Valentine, University of California Medical Center, Los Angeles 24, Secretary.

FEBRUARY

AMERICAN ACADEMY OF ALLERGY, Morrison Hotel, Chicago, Feb. 9–11. Dr. Bram Rose, Royal Victoria Hosp., Montreal, Quebec, Secretary.

AMERICAN ACADEMY OF FORENSIC SCIENCES, Drake Hotel, Chicago, Feb. 26–28. Dr. Walter J. R. Camp, 1853 W. Polk St., Chicago 12, Secretary.

AMERICAN ACADEMY OF OCCUPATIONAL MEDICINE, Boston, Feb. 11–13. Dr. L. Blaney, 1608 Walnut St., Philadelphia 3, Secretary.

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AMERICAN MEDICAL ASSOCIATION: Fifty-fifth Annual Congress on Medical Education and Licensure, Palmer House, Chicago, Feb. 7–10. Dr. Edward L. Turner, 535 N. Dearborn St., Chicago, Secretary.

CALIFORNIA MEDICAL ASSOCIATION, Sheraton-Palace Hotel, San Francisco, Feb. 22–25. Mr. John Hunton, 450 Sutter St., San Francisco 8, Executive Secretary.

CONGRESS ON INDUSTRIAL HEALTH, Netherland Hilton Hotel, Cincinnati, Feb. 16–18. Dr. B. Dixon Holland, 535 N. Dearborn St., Chicago 10, Secretary.

MARCH

AMERICAN COLLEGE OF ALLERGISTS, Fairmont Hotel, San Francisco, Mar. 15–20. Dr. M. Coleman Harris, 450 Sutter St., San Francisco, Secretary.

AMERICAN LARYNGOLOGICAL ASSOCIATION, The Homestead, Hot Springs, Va., Mar. 8–9. Dr. James H. Maxwell, University Hospital, Ann Arbor, Mich., Secretary.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL & OTOLOGICAL SOCIETY, The Homstead, Hot Springs, Va., Mar. 10–12. Dr. C. Stewart Nash, 708 Medical Arts Bldg., Rochester 7, N.Y., Secretary.

AMERICAN ORTHOPSYCHIATRIC ASSOCIATION, Sheraton-Palace Hotel, San Francisco, Mar. 30–Apr. 1. Dr. Marion F. Langer, 1790 Broadway, New York 19, Executive Secretary.

AMERICAN OTOLOGICAL SOCIETY, The Homestead, Hot Springs, Va., Mar. 13–14. Dr. Lawrence R. Boies, University Hospital, Minneapolis 14, Secretary.

MICHIGAN ACADEMY OF GENERAL PRACTICE, POST-GRADUATE CLINIC, Sheraton-Cadillac Hotel, Detroit, Mar. 5. Dr. F. P. Rhoades, 970 Maccabees Bldg., Detroit 2, Convention Manager.

NATIONAL HEALTH COUNCIL, Palmer House, Chicago, Mar. 17–19. Mr. Philip E. Ryan, 1790 Broadway, New York 19, Executive Director.

NATIONAL MULTIPLE SCLEROSIS SOCIETY, New York, Mar. 9. Mr. Donald Vail, 257 4th Ave., New York 10, Secretary.

SOUTHEASTERN SURGICAL CONGRESS, Deauville Hotel, Miami Beach, Fla., Mar. 9–12. Dr. Benjamin T. Beasley, 45 Edgewood Ave., S. E., Atlanta 3, Ga., Secretary.

SOUTHWESTERN SURGICAL CONGRESS, New Brown Palace Hotel, Denver, Mar. 30–Apr. 1. Dr. C. M. O'Leary, 1213 Medical Arts Bldg., Oklahoma City, Okla., Secretary.

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SOCIETY OF NEUROLOGICAL SURGEONS, Waldorf-Astoria Hotel, New York, Apr. 27–28. Dr. Bronson S. Ray, 525 E. 68th St., New York 21, Secretary.

INTERNATIONAL AND FOREIGN

FEBRUARY 1959

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SOCIETY OF UNIVERSITY SURGEONS, Denver, Colo., Feb. 12–14. Dr. James D. Hardy, Univ. Medical Center, Jackson, Miss., Secretary.

MARCH

BAHAMAS MEDICAL CONFERENCE (Seventh), British Colonial Hotel, Nassau, Bahamas, Mar. 30–Apr. 12. For information write: Dr. B. L. Frank, 23 E. 79th St., New York 21, N.Y., U.S.A.

CANADIAN MEDICAL ASSOCIATION, British Columbia Division, Section of General Practice, Harrison Hot Springs Hotel, Harrison Hot Springs, B.C., Mar. 19–21. Dr. W. Douglas McCauly, 149 Kenneth St., Duncan, B.C., Registrations.

INTERNATIONAL COMMITTEE OF MILITARY MEDICINE & PHARMACY, Paris, France, Mar. 31–Apr. 5. For information address: International Committee of Military Medicine & Pharmacy, Hospital Militaire, 79, rue Saint Laurent, Liége, Belgium.

APRIL

JAPAN MEDICAL CONGRESS, Tokyo, Japan, Apr. 1–5. For information address: The Japan Medical Association, 2 Chone Surigadai Kanda, Chiyoda-Ku, Tokyo, Japan.

MAY

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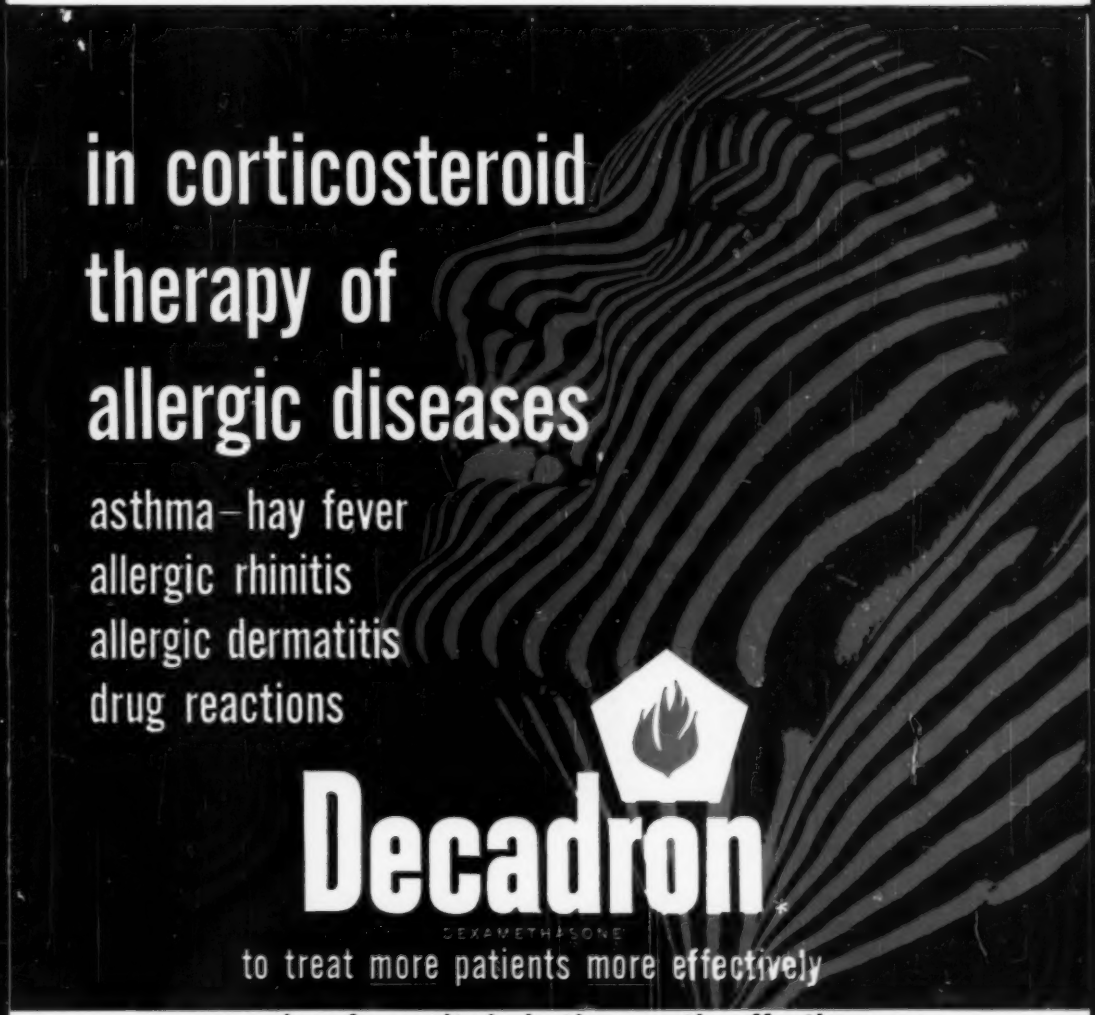

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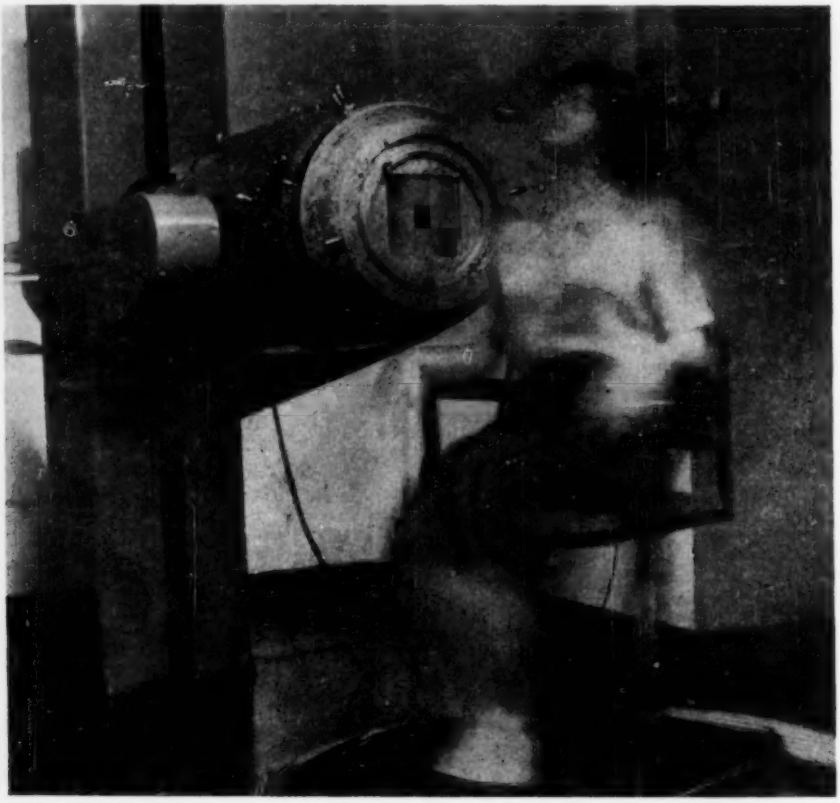

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The Problem of the Change*

LOWELL T. COGGESHALL, M.D.†
School of Medicine, Division of Biological Sciences, University of Chicago, Chicago, Ill.

A nation's search for talent and the manner in which it is permitted or encouraged to develop has always been a critical aspect of national existence. Never has this been more true than at the present time. We have a special, highly important responsibility to society, since we provide the medical talent and the research upon which our national health depends. Surely the well being of our people is secondary only to our national security.

Today we are experiencing an educational ferment in medicine impressive in substance, quality, and foresight. In the past decade and a half, there has probably been more experimentation resulting in better educational patterns and more research of a superior quality than has occurred during any similar period in medical history. Never before have so much thought, effort, and resources been devoted especially to the noncurative aspects of medicine. The success of our efforts is a matter of public as well as professional interest.

The current tempo of events has prompted some critics to call us over-enthusiastic, impatient planners. Others constantly urge more foresight, bolder steps, and greater expenditures. Whatever the outcome, we are now in a historic period of great change. We cannot be content with our successes—to be complacent is to regress. Never before have we, as an Association, done so much or had so many active programs in progress or in the planning stage.

Yet when we look to our present and future responsibilities—one should probably designate them as opportunities—both at home and abroad, it is obvious that we have just begun. We must accept the challenge to greater effort while accepting the fact that changes create problems. Further, there must be constant emphasis that our grave concern for the future deals with the welfare of our people and not with a jealous and restricted regard for the medical schools.

The problem of the change I wish to discuss this morning lies largely in the field of our partnership with the federal government and what must be done to meet the ever increasing demands. I start with incontrovertible evidence that our government has an intense interest in medical research and education and with the firm belief that this interest and participation are permanent.

The Congressional attitude toward continuing support is apparent at many points but can best be described by quoting excerpts from the Conference Committee on the H.E.W. 1959 Appropriation Bill, later approved by the Congress. The House members said, "Insofar as the federal government is concerned . . . we do not want dollars alone to limit the rate of progress against disease through research. . . . Trained people and ideas, and facilities and equipment need time—these too are essential to progress against diseases." In the Senate the same sentiments were expressed: "In view of the progress in medical research leading to gains in humanitarian and economic terms that far outweigh the cost in money, the committee must again reiterate that it will continue to insure that lack of money will not be permitted to impede the advancement of medical research in this country, and it will

* Presented at the 69th Annual Meeting of the Association of American Medical Colleges, Philadelphia, Pa., October 13, 1958.

† President, Association of American Medical Colleges.

continue to recommend funds ample for the training of scientists and for construction of research facilities."

There is a second belief that even with the present rate of support, the anticipated resources will still not be sufficient for our future needs. However, I believe that increasing material resources will be made available because they do not depend upon the consuming interest of a few legislators or administrative leaders. The relatively liberal support of Congress is a reflection of public demand. Also, the public indicates further support by contributing generously on its own through private gifts and bequests and through the voluntary health organizations. In turn, the American people expect, even insist on, more rapid progress toward the solution of the most difficult health problems. Thus, the generous moral and material support of the medical scientist and educator today creates some problems of plenty as well as of want.

Perhaps a brief look at the past can help us to gain a better insight into current federal action.

Prior to World War II medical research in this country was supported principally by foundations, by private gifts, and by the universities; there was practically no federal expenditure for this purpose. Although accurate figures are not available, the total outlay of public funds was relatively meager.

In contrast, last year the universities, medical schools, and private research institutes received $109 million or 66 per cent of their total research budgets from the government alone.

Interesting developments throughout our country's history show that interest in medical science is not new. The idea that the government be the patron saint of science was recognized by the framers of our Constitution; although they did not provide specifically for universities, there were frequent allusions to the need for a national scientific institution or institutions. Congress in the 1780's stated that it was within their power and responsibility to promote science, and they attempted in vain to do so.

Benjamin Franklin and Thomas Jefferson were strong advocates of the development of a national posture in science. The states, although sympathetic, were jealous of the republic and regarded the gesture as one of federal intrusion. Little or no further concern was evidenced by Congress in medicine except to establish quarantines to stem yellow fever and cholera.

However, in 1798, President Adams, with the support of Congress, passed an act which compelled merchant seamen to pay 25¢ monthly for medical care and directed the administration to build hospitals and provide physicians for this service. This significant event, enacted 160 years ago and still in effect, can be defined as a classic example of socialized medicine and compulsory health insurance. Incidentally, this act was the beginning of the Public Health Service.

Jefferson later attempted to persuade Congress to establish a national academy and university to be headed by a chancellor with broad powers, including traveling professors—an item not unknown to this group—and housing laboratories, libraries, botanical gardens, military and naval sciences, a patent office, a mint, and a medical school. This effort, however, did not materialize, and from the late 1700's to 1830 science and government were only nodding acquaintances.

As far as the government was concerned, there was little interest in science even during the Civil War. The National Academy of Sciences was established to furnish government with scientific advice, but with relatively little or no financial support. At the time of World War I there was little basic research; most of the activities were of an applied nature and were conducted by the Army. However, the National Research Council was established in 1918, and the Rockefeller Foundation gave $50,000 to create a Division of Medical Science.

In 1925 President Hoover, then Secretary of Commerce, succeeded in stimulating a national research fund, but this was drastically cut during the depression.

The first signs of continuous and expand-

ing interest of the government in health affairs began in 1930, when the Hygiene Laboratory of the Public Health Service was moved to Bethesda and renamed the National Institutes of Health. The establishment of the National Cancer Institute in 1937 stands out as a significant event in the history of public health, particularly when it was directed by Congress to extend its efforts to intra- and extra-mural support of research and training. For the first time there was a radical departure from the limited concern for infectious disease and quarantine to the recognition that total health was a part of public welfare.

This was a sharp turning point in our government's attitude toward medical science. In passing, it can be stated that the National Cancer Institute, in its experimentation to support cancer research and teaching, created a pattern of operation that has been both effective and generally respected. This has occurred because university scientists were given the major voice in directing the use and the distribution of these federal funds.

Categorical training grants for cancer were later extended to include heart and mental diseases. Last year general training grants for the basic medical sciences were instituted. The total to be spend for the latter purpose in fiscal 1959 will approximate $6,040,000. In terms of government participation in medical education—and looking toward better health and welfare—this is a most important action, materialistically and philosophically.

To return, however, to the historical picture, the need for increased effort in both basic and applied fields of medical research became apparent to the government as a whole during World War II, and large amounts of federal funds were provided to the universities. Both "crash" and long-range programs were financed largely under the guidance of the National Research Council committees.

Following the war, our universities were never to return to their previous frugal existence. First, the Office of Naval Research provided substantial grants for basic research. Later, the Public Health Service, the Veterans Administration, the three departments of the Department of Defense, the Atomic Energy Commission, and the National Science Foundation entered the grants field. These agencies continue to distribute new medical research funds.

Perhaps this is as good a time as any to comment on the multiplicity of federal agencies providing funds for medical research. This practice has occasionally been questioned as expensive duplication of effort. Is one agency aware of the others' activities, et cetera? I feel very strongly that this is not harmful. The activities are complementary and, in a sense, offer a measure of control, since each must compete with programs to satisfy certain needs and to excel in quality and effectiveness.

Thus, since our country's very beginning, we have observed a modest but a continuing governmental interest in medical science. The historical trend can be compared to the small brook which eventually becomes the mighty and powerful Mississippi. Our Mississippi stage began about a decade and a half ago.

Let us look briefly at the financial picture over the past 10 years, the period of greatest increase. During 1957 the nation spent more than ten billion dollars for all research and development. In 1948 the comparable figure was about two billion.

Has the total medical research dollar increased proportionately? It has, and very rapidly. In 1947 a total of $88 million was spent by all sources on medical research in this country. By 1957 this had grown to $330 million, approximately a fourfold increase. The federal share during this period grew from $28 million to $186 million, a sixfold increase. Private research funds increased only about 2½ times, from $15 to $35 million.

The source of university medical research funds is significant. In 1958, 66 per cent will come from the government, 21 per cent from philanthropy, 12 per cent from endowment, and 1 per cent from industry. If we base our

prediction of future trends upon the past 15 years' experience, total medical research expenditures will probably amount to approximately a billion dollars by 1968. The estimate of the Bayne-Jones Committee was 1970, but the action of the last Congress advanced the time by almost 2 years. The amount going to the medical schools, universities, and research institutes will be about $500 million, or nearly triple the $165 million for 1957.

Incidentally, the annual appropriation of federal funds has led to the wide use of the term "soft money." This term is literally correct, but realistically speaking, these funds are probably as stable as our so-called "hard money" and should be so viewed.

There will be both an actual and a relative increase in the level of federal support, although we would prefer to see it retained at its present ratio of 50-50 matching funds. These increases can be defended, however. An actual increase is in the nation's interest and, in fact, is demanded by our people. The relative federal increase probably will result if all other resources fail to maintain their proportionate share of this load.

Unfortunately, it is difficult to believe that the federal share of the projected billion dollars will be matched by all private funds in 1968. Receipts of the voluntary health agencies have increased in spite of the recent recession, but not to this extent. Business should provide a greater financial stake than 1 per cent of the total research funds used by our universities, particularly those industries with a direct interest in health. A change in the distribution of business funds would help to offset some of the imbalance favoring laboratory research over basic support. Foundations and voluntary health agencies should distribute more of their funds for general support. Too many still insist that their funds be used for specific and new research projects. Such restrictions only increase the financial deficits and augment the difficulties of the schools by draining off the funds that should go to improve salaries or create new positions.

Present patterns of support have done much for laboratory or, as sometimes referred to, "bench research." The categorical project grants have provided fairly flexible support, particularly for the recognized investigator. However, the needs for more basic or creative research are far from being satisfied. Much more investigation must be done on relatively unexplored areas of human behavior, the problems of the aged, et cetera. All of this will require considerably more financial support.

Every study to date has verified the necessity for greatly increased expenditures to provide necessary research beds, improved equipment, and the facilities to educate increasing numbers of physicians, scientists, and auxiliary personnel essential for our country's future health needs. We must plan to meet these needs, and now, because belated "crash" programs are too expensive and generally less effective. But can we solve the problem of maintaining present facilities and faculties while providing for the essential expansion for the future?

First, we must get accurate cost and personnel studies to determine more precisely and realistically our current and future needs. This will enable us to establish long-range goals that will furnish a more articulate sense of purpose to guide us and those who will assist us. I urge the Association to undertake without further delay a more critical examination of all pertinent data in order to tell our story in a more convincing manner.

Now let us look at some of the ways by which medical schools can improve their financial situation.

1. The medical schools should be relieved of the community responsibility of providing free medical service to the indigent or the service patient. With over a third of our population now covered by some variety of insurance for health purposes, there would seem to be less necessity for imposing on the medical schools the tremendous financial burden for all, or even a portion of, the medical care costs. The use of the charity patient for teaching purposes is not necessary. Several institutions have successfully

used the paying patient to an intellectual advantage, without incurring financial deficits.

2. Voluntary national and local health agencies, which contribute in excess of $50 million each year for medical research, should be educated to two basic convictions: (*a*) that their goals can be achieved more readily by supplying the total costs of research, not just the direct ones; and (*b*) that they must undertake to support general programs rather than an ever mounting number of relatively small projects.

3. There are in excess of 2,000 foundations with specific health interests, almost all of which insist on the ancient tradition of prohibiting funds for alteration of laboratories or general support. Foundation administrators should be shown the importance of supporting the wellspring on which future progress depends. The support of the National Fund for Medical Education and the American Medical Education Foundation have both been extremely helpful, although as yet far below their potentialities. Their strength lies in their flexibility. Industry, in general, and certain types of industry, in particular, have a far greater stake in medical education than the 1 per cent they now contribute.

4. There are several other ways which seem to be exploited to near capacity, i.e., increased student fees, private gifts, larger appropriations from city and state governments.

5. The failure to provide for full coverage of costs on government research grants is one major source of financial difficulty in many medical schools. To continue with the present allotments by the Public Health Service for indirect costs will lead only to further insolvency. To eliminate or drastically reduce research activities is not the solution.

The payment of the full costs of medical research would assist in removing some of the financial insolvency of medical schools and should be provided now. But it must be emphasized that the failure to provide an adequate percentage for indirect costs should not be confused with direct support for over-all basic operations.

More important, commenting on this topic, the House committee said that, in refusing an increase above 15 per cent, "It was not to be construed as a lack of awareness on their part that medical schools are facing acute financial crisis in terms of financing their general operations. The question is whether the problem *is to be met directly or indirectly*" (author's italics).

Thus, Congress brought into the open a vital question, and one which in my opinion can no longer be avoided, namely, has the time arrived for some federal support of basic operations within our medical schools? If we are realistic, we must recognize, in principle, at least, it arrived some time ago. Most actions of Congress in the health field in the past decade and a half have been indicative of this eventuality. Certainly this year with the current variety and magnitude of support, i.e., expenditures by NIH alone will approximate $30 million for facilities, $9.6 million for fellowships, over $48 million in training grants, and $139 million for research grants, to be spent primarily in the medical schools, there is every reason to regard this question as practically academic. If we are to accept federal funds for operations, however, there are a few important questions to be answered.

Is the freedom of the university and its medical school likely to be trespassed or dominated by federal assistance in the form of general funds? The answer in my opinion is definitely no. If we can accept in excess of $200 million a year for training the medical student or one working for his Ph.D., categorical and general training funds, on a very flexible and intelligent allotment system, it seems to me not possible to compromise our situation by providing a few funds that would pay for heat and light, for example.

We have had 10 years of experience and have observed government dependence upon non-bureaucratic talent for both policy and operational guidance. In practically every role one can see the paramount influence of the university scientist and educator,

and, although there have been some shortcomings in the over-all program, one can only praise those early leaders who established such a sound program. If control is to be lost, it will not occur as a result of some additional general support dollars but from our own weakness. Actually, there is no more to fear with federal than with state tax dollars—probably less. I strongly hold that most education is the responsibility of the state, but it must be recognized that medical education and research are dependent upon schools' having a national character and function.

Second, does the need exist? I know of no valid evidence to the contrary. We have struggled valiantly since the war with a near-explosive research program and with vastly accelerated and costly programs in almost all other areas. Although mostly successful, we are constantly falling behind, and the future course will indeed be hazardous. The years ahead will require greater expenditure than ever to meet the health needs of our expanding population whose social, economic, and medical needs are constantly increasing in volume and complexity. And, as a matter of fact, the more successes we have in the research fields, in extending life, the more problems we create for ourselves. Certainly all would prefer private endowments, and no one would be concerned about outside support if the need did not exist.

Next, will federal funds for this purpose dry up private resources? If this were the case, it would have happened some time ago. Increased government expenditures for medical welfare have thus far generated greater private support, not less. I see no reason for the pattern to change in the future. It will be the lack of quality performance on our part, not federal funds, which will result in any disinterest on the part of the public.

Some will ask, will not such federal support alter or influence the pattern of medical care? I believe not. The only result will be an increase in the number of more adequately trained and educated personnel of all types. Actually supplying this need in time is more likely to result in eliminating the necessity for any radical changes in our medical care program and the danger of "crash" programs, always too late and usually poorly utilized.

To me, the answers to these and related questions require an unequivocal answer. After carefully considering the problem for a number of years, may I say that the time for direct federal operational funds, free from any implication of subterfuge, has arrived. Indeed, it is overdue. Such funds should be provided, and I am confident that provisions can be enacted which will result in their intelligent and prudent usage, and without federal control.

If made available, readjustments of the present program can be made which should result in greater effectiveness and relatively little or even less dollar expenditure than now occurs. Recognition of the generally intelligent role played by Congress in providing support for the over-all health program and the intelligent way in which it has been administered is not to say that the partnership arrangement between government and medical education cannot be improved. Portions of the program have hurt the universities by draining off some of those funds vitally needed for other essential purposes. There have been too many short-term projects, and the entire program has required far too many personnel, both within and without government, than is now needed, or at least can be afforded. Just one brief example of the latter point: in a recent survey, 43 of the first 81 staff members at my institution reported that as a group they gave 663 days per year away from the University, most of it in government service devoted to the examination projects, mostly relatively small. One is encouraged by current attempts to remove these deficiencies.

Those responsible for the government program and their advisers are giving increased attention to the necessity for providing broader purpose funds. General operating funds would place the greater share of the responsibility than now exists in the university medical school where it belongs.

However, to insure the preservation of the healthy partnership role that has existed to date, certain positive steps should be taken. First, the government or the Congress should create a commission composed of leaders in the fields of education, industry, the medical profession, and government. The aim of this body would be to establish long-range goals for the educational and research needs of our country and to furnish top-level advice to the government, particularly as it relates to this program.

Second, requests for general operating funds should be approved by a council such as has been proved so satisfactory for the distribution of research construction grants. Third, we in the medical schools must be prudent and exercise self-restraint, and, in order to promote the attitude of matching federal funds with private dollars, requests for assistance should be related to this principle. Fourth, there should be a scale with more liberal provisions for new well founded schools or current schools in dire financial straits, because, as has been stated several times, present facilities and patterns of operation cannot possibly provide for future needs. Fifth, I repeat, the Association, with all realistic haste, must now reassess its current and future needs.

There are many other facets which cannot be included in this already over-long talk. Although it is a complex problem, I believe some direct federal support, properly allocated and controlled, offers the solution for our present and future problems and will permit us to get about our business of medical education and research.

One point I wish to re-emphasize: We are not speaking about financial comfort for medical schools; we are speaking about the future health of our country. And I believe that, even with direct federal support, an atmosphere can be maintained that encourages private initiative and enterprise with government in partnership roles. Perhaps you have similar or divergent convictions, but in any case we can no longer avoid a more careful and thorough exploration of all aspects of the problem. How else can we maintain the quality of our present effort and guarantee the meeting of our future needs? To me, this is the problem of the change.

The American Medical Association–Medical School Partnership*

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It is my understanding, based on what was admittedly a cursory search, that this marks the first occasion in many years on which the president of the American Medical Association has had the honor of formally addressing the Association of American Medical Colleges. I recognize that the intent of the invitation was, and properly should have been directed, to the office rather than to the man. Nevertheless, I am pleased and grateful for the conspiracy of chance and thoughtful attitude which have brought me this opportunity to speak to you.

In early thinking about this address, I found in Webster's Dictionary a definition of partnership which, with only minor modification, can serve well as a frame of reference for my subsequent remarks. A partnership is the relationship existing between two or more competent persons who have contracted to place their money, effects, labor, and skill, or some or all of them, in an endeavor with the understanding that there shall be a communion of profit between them.

What stake does each of our organizations bring to this kind of a partnership? What is to be our endeavor? And what are the profits that should be returned in communion between us? I can, at best, present only a partial response to this question.

The fundamental nature of our endeavor is easier of statement than of accomplishment. Our labors are directed toward the single obligation of maintaining health. This is our collective objective, though as individuals we may strive most to discover or impart medical knowledge or to cure or prevent disease.

It will be convenient for our thinking to consider this imposing responsibility of medicine in the three segments of *education*, *research*, and *practice*.

I wonder if, on initial thought, many of you would not accept *education* and *research* in medicine as the rightful concern of medical schools and their parent universities. In a similar manner, *medical practice* might be considered as the rightful concern of organized medicine.

Selection of this method of meeting the constant though changing challenges in medicine would be, in effect, a denial of the interdependence and interrelationship between medical research and education on one hand and medical practice on the other. This divisive approach would surely abrogate a concern for the welfare of people as the supreme law which governs our professional lives. To deny a concept of unity for research, education, and practice is to ignore reality.

The dependence of practicing physicians on education and research is clear-cut and direct. It finds expression, perhaps sometimes unrecognized, in the routine of daily activities. Problems and inadequacies in medical practice stimulate and give direction to medical research. Knowledge, newly discovered, is given practical meaning

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through education and practice. Medicine's history tells us how inseparably bound together are medical education, research, and practice and that none can long flourish without the other.

The professions have traditionally assumed a responsibility to be certain that their ranks are continuously replenished.

In recent years the position of the American Medical Association in regard to present and future needs in medical education has frequently been misinterpreted by many individuals and by some organizations through the misuse of statistical data. Statistical information has at times been taken out of context and interpreted to the effect that the official position of the American Medical Association is that there is no need for increased numbers of physicians. No such official position has ever been enunciated. American medicine fully recognizes the needs being brought about by the increasing population, social and economic trends, and the changing dimensions of medical knowledge and its application.

The increasing population, together with the various other facets of its shifting pattern, obviously indicate the need for constantly increasing the number of physicians. This necessitates consideration on the part of existing medical schools as to possible augmentation of the number of students admitted as well as the development of new facilities. Furthermore, the A.M.A. believes it is a logical function and responsibility of American medicine to encourage institutions of higher education where medical education has not been undertaken in the past to give serious consideration to the development of opportunities in this field if all other factors make it appear desirable to do so.

The A.M.A. and the Association of American Medical Colleges, independently and through the Liaison Committee on Medical Education, are on record in encouraging the consideration and creation of both 4-year programs of medical education and 2-year programs of basic medical science, where institutions of higher education offer the setting which would make such developments mutually advantageous and desirable.

The medical profession's awareness to changing trends and growth is part of its obligation to the public it serves. In the United States a recognition of this professional obligation directly accounted for the formation of the American Medical Association.

Motivated by a sincere desire to bring order to the chaotic state of medical education, the Medical Society of the State of New York issued an invitation to each medical school and medical society to send delegates to a national medical convention at Philadelphia in 1840. Neither the schools nor the societies of other states responded. Convinced that it was not possible to establish and maintain high standards of medical education in one state alone, the same medical society in 1845 adopted a resolution introduced by Dr. Nathan Smith Davis which read:

> Whereas, it is believed that a national convention would be conducive to the elevation of the standard of medical education in the United States; and
>
> Whereas, there is no mode of accomplishing so desirable an object without concert of action on the part of the medical colleges, societies and institutions of all the states; therefore be it
>
> Resolved, that the New York State Medical Society earnestly recommends a national convention of delegates from medical societies and colleges in the whole Union to convene in the city of New York . . . for the purpose of adopting some concerted action on the subject set forth in the foregoing preamble. . . .[1]

In May, 1846, as a result of this call, delegates from medical societies and colleges from sixteen states convened in the hall of the Medical Department in New York University. This led to the formation of the American Medical Association a year later in Philadelphia.

The preamble to the constitution of this new association, declaring the purposes of the organization, read in part: ". . . for cul-

[1] Dr. M. Fishbein, A History of the American Medical Association, p. 22.

tivation and advancing medical knowledge; and for elevating the standard of medical education. . . .'"[2]

Among the first standing committees created was one on medical education. For nearly 50 years this group labored almost fruitlessly in a frustrating environment created by men determined to protect selfish interests. In 1904, the Council on Medical Education was formed under the chairmanship of Dr. Arthur Dean Bevan.

The Council early established a minimum standard of medical education toward which it might work and in 1906 made personal visits to the 160 schools then existing. On the basis of minimal standards which were leniently applied, almost half of the schools were considered either unacceptable or of doubtful acceptability. The report of this study was presented by Dr. Bevan at the third annual Congress on Medical Education in 1907. It also was furnished to the medical schools and the state licensing boards. By 1910 when Dr. Flexner, accompanied by Dr. Colewell, Secretary of the Council, made the second survey of medical schools, 40 of the weaker schools already had closed.

It is not my intention to suggest that the tremendous accomplishments in medical education during the early part of this century were solely the result of the efforts of the A.M.A. Council on Medical Education and Hospitals. Such is not the case, for there were other highly important forces working toward the same goal: The Flexner study for the Carnegie Foundation, the efforts of your own Association, and the Federation of State Medical Boards, and the impact of the Johns Hopkins development. The rewards of these heroic educational achievements in medicine are sufficient to distribute among all the able and devoted men who had the wisdom to do the right thing at the right time.

The American Medical Association, however, does take pride in whatever share of these accomplishments history may grant it. During that period and in the impressive progress which has followed, I believe that medicine has fulfilled, in a large measure, the responsibility in education for which it is obligated as a professional calling. Some of this has resulted from the organized efforts of the A.M.A. Council on Medical Education and Hospitals, and much of it has been the work of individuals as teachers, investigators, and administrators.

It is more than a coincidence that the imposing progress in medical education of the past half century has accompanied its development as a university function. Indeed, in retrospect, it seems likely that if medical education in the United States had remained within its university beginnings, the revolution that started five decades ago would have unnecessary. I am not unmindful that there are some medical schools with commendable programs in education and research that are not integral parts of universities. There are other medical schools whose relationship with universities are perhaps somewhat tenuous. Nevertheless, in both instances their objectives and methods must be university-oriented, or their positions as respected institutions could not have been maintained.

In a strict sense, medicine is not in itself a science but rather a collection of the applications of chemistry, physics, and mathematics in biology. The increasingly protean nature of the sources of knowledge significant to medicine's future makes it all the more important that the relationships between medical schools and universities be strong and effective. The university setting, almost alone, can provide the wide spectrum of physical, biological, and social science disciplines within which so much of further growth in medicine will rest. At the same time, it should be recognized that universities are not compelled to concern themselves with medical education. Therefore, the traditional responsibility of a profession for seeing to the education of its successors must not be lost.

I have reviewed some aspects of what the organized medical profession has brought to medical education and medical schools and certain of the reasons for its continuing

[2] *Ibid.*, p. 30.

to play a significant role. May I now direct your attention to the other side of the coin—the role of medical schools in the practice of medicine and more particularly as it relates to the American Medical Association.

Tomorrow's medical practice, in a very real sense, rests in the hands of medical schools. You have the imposing responsibility of selecting the individuals who will do the practicing. The quality of practice in which they will engage shall be determined largely by the wisdom of your selection and the educational opportunity you can afford them as medical students. The recognition given to the importance of the selection process is attested by the thought and care with which it is exercised and studiously reappraised.

Medical schools and their teaching hospitals provide internship and residency opportunities for many graduates. They are active and very effective sources of opportunities for the continuing education of practicing physicians.

Through all of these and many other activities medical schools have great responsibility for the whole tenor of medical practice.

The practice of medicine has been defined as the exercise of knowledge in the recognition, treatment, and prevention of disease. As a student learns of the biological processes of man and the causes and nature of their change in response to a variety of causes, he is learning the basis of medical practice. He and his teachers clearly and directly take part in medical practice throughout programs of clinical instruction. A medical school must provide its students an opportunity to participate in medical practice. It also must insure that the practice be exemplary in all respects.

Without student—and therefore faculty—participation in patient care, there can be no medical education that would be acceptable. Thoughtful physicians will agree that this vital student and teacher experience should encompass patients representing a sampling of the population which is appropriate in regard to age and sex, as well as social and economic background. Where there has been controversy between a medical school and a medical society, it has not involved the basic need but rather the economic circumstances of the teachers' participation.

Many practitioners of medicine have been slow to consider and understand some of the problems confronting medical schools. Although this is not as it should be, as a practitioner I can understand how natural it is to become engrossed in the challenges and satisfaction of practice to the exclusion of other interests. A large number of private practitioners attended medical school when there were hardly any full-time clinical teachers. Without a first-hand acquaintance with the contemporary complexities of medical school activities in education and research, it is difficult for them to appreciate the need and values of this new kind of teacher.

On the other hand, medical practitioners may often feel that medical school faculties take little interest in the practitioners' perplexing problems which result from a rapidly changing society.

Medical practice and medical education have been, are, and must continue to have a deep dependence on one another. This is but another way of stating that organized medicine and medical schools must continue the partnership that has always existed if our obligations to society are to be effectively achieved.

This address has been directed to the questions of what is the stake of each of us in this partnership, what is our endeavor, and what are the profits that we may hope to share. I have presented part of the answer to the first two components of these questions but have not touched on the rewards that we may expect. The profit accrued to the present should not concern us, since it has already been re-invested or otherwise expended. Our future rewards will differ from those of the past only in degree and should consist of the satisfaction of meeting better the health needs of society.

It is doubtful that there are any endeavors jointly undertaken by two or more individuals or organizations which would not increase in productiveness in direct proportion to an increase in understanding of needs and motives between the parties concerned. The partnership between the American Medical Association and medical schools is no exception to this principle.

Organized medicine counts among its most valued objectives the establishment of ever higher standards of medical education. It sincerely desires to be as effective a partner as possible in achieving this goal. Where it will stumble will largely be determined by a lack of full understanding of issues involved. A meaningful understanding can be brought about only by continuously working at it. One essential to this is a regular mechanism for discussing problems, challenges, and satisfactions between representatives of medical schools and medical societies.

The potential value of such a mechanism is well illustrated by the Liaison Committee between the Executive Council of the Association of American Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association. There is now in the process of formation another committee to be composed of University Presidents and members of your Executive Council on one hand and our Board of Trustees and Council on Medical Education and Hospitals on the other. We look forward to this new and more expansive relationship with confidence that it will lead to a better mutual understanding and more effective accomplishments.

Though these groups may deal with certain local issues that have widespread significance, they cannot substitute or remove the need for close liaison between individual medical schools and societies.

I believe that medical leaders, deans, and faculty members have a broad responsibility to medicine. It is my sincere opinion that these leaders should assume a more active role in the activities of organized medicine. A few of you already serve actively in various roles, but many do not. The American Medical Association desires and needs your counsel in the determination of its policies and the conduct of its affairs.

A direct and specific way in which you could respond to this invitation would be to have a representative group attend the two annual meetings of the House of Delegates to express your viewpoints to the various Reference Committees on matters under consideration. The Reference Committee on Medical Education and Hospitals has benefited several times recently from the advice of a few of your members. We have appreciated this, and I would like particularly to express gratitude to Dr. Ward Darley, your Executive Director. I believe he had attended each meeting since assuming this post and has been a significant influence in assisting the Reference Committee to arrive at sound decisions for subsequent action by the House of Delegates. However, there are other Reference Committees which consider matters of great importance to American medicine where your opinions should be heard so that the American Medical Association can develop policies based on a composite of the best available advice.

Our Council on Medical Education and Hospitals accepts, as a real challenge for the future, the improvement of educational opportunities in the internship and residency areas and in continuation of medical education. It has established as its goal the elevation of standards in these areas to a position where the programs will uniformly compare favorably with the standards attained in basic medical education. Many individuals with primary responsibility in medical schools are already assisting in this effort. I am certain that the Council would welcome additional assistance from you as individuals and as an association in these endeavors.

It is apparent that my remarks have been addressed to you in terms of your responsibilities to medical schools and the Association of American Medical Colleges. I am aware and greatly pleased that most

deans and faculty personnel are members of the American Medical Association and its constituent and component societies. Although our constitution allows full membership only to physicians, we are aware of the importance to medicine of many individuals who do not hold the medical degree. We are honored to welcome such individuals as affiliate members.

Approximately one quarter of the total membership of the American Medical Association have faculty appointments in medical schools. Despite the productive and respected role of the Council on Medical Education and Hospitals, it is my belief that the viewpoints and opinions of the teachers and educators in our membership are not expressed to a degree commensurate with their members and importance. You and your faculty colleagues can, and I trust will, remedy this by deliberate attention to our affairs, which incidentally are also your affairs.

Medical educators are concerned with the problem of providing educational facilities to adequately meet the growing demands of an enlarging and more health-conscious public for medical service. This, too, is a deep concern to American medicine, and the Association accepts its obligations to be a co-partner in advancing a satisfactory solution. We recognize the financing problems of medical schools and jointly must strive toward a reasonable goal. There are these and many other problems of mutual concern which demand the best of our concerted abilities.

I have suggested some means by which medical schools and their faculties may help the American Medical Association to find reasonable answers to the perplexing problems facing it Any thoughts you may have toward this same end will be received with gratitude and sincere consideration.

More important, however, I trust that you, individually and collectively, will give serious attention to methods by which the American Medical Association may more effectively exert its efforts to assist the Association of American Medical Colleges and the institutions it respresents in attaining the highest possible objectives in medical education.

Our ultimate goals are the same, and we do injustice to one another and to the goals we seek when we do not fasten our attention on the firm bonds that join us in partnership.

Education for the Professions in Europe and in the United States

Alan Gregg Lecture*

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To be the first Alan Gregg Lecturer is a great honor, but the honor carries with it a special responsibility that I am hardly in a position to fulfill. I have a strong feeling that this lecture should be devoted to reviewing those aspects of medical education in the development of which Alan Gregg played so significant a role. If I were to hark back into the past and dig out of my memory incidents from my 20 years of experience as a university president, I might be able to make a minor contribution to an effective presentation of a fascinating story—the story which should be the subject of the first Alan Gregg Lecture. However, the evolution of American medical education between the two World Wars and Dr. Gregg's powerful influence on this development is a subject which could be handled adequately only by a person who was both a medical man and an educator. For someone like me, who had not been immersed professionally in this particular stream of history, to attempt to discuss the changes in the fields of Alan Gregg's activities would be highly inadvisable.

At least that is my opinion, and I judge your committee early arrived at a similar conclusion, for I was asked specifically to speak about those phases of the education of a medical man which are essentially nonprofessional. In particular, I was asked to tell you something about my study of American secondary education. Now, Alan Gregg's wide interests and sympathy with all efforts to broaden the education of professional people brought him from time to time in contact with many of the problems I shall refer to in a moment. But the focus of my address will be far removed from the center of the activities of the man in whose memory this lectureship has been established. Therefore, before turning to the subject I have promised to discuss, I should like to take this opportunity to record my indebtedness to Alan Gregg.

I am not thinking primarily of his official relation, as an officer of a foundation, to the medical school of the university over which I had the honor to preside. I am thinking of those relations of a more personal nature. I have in mind the needs of a young ex-chemist suddenly confronted with the complexities and delicacies of dealing with members of a medical faculty in the depths of a national economic depression. Dr. Gregg, even in the thirties, had wide experience from which to draw. His willingness to lend an ear and when possible a hand, I shall remember always; likewise, the warmth of his friendly approach and sympathetic understanding. In recording these memories and my gratitude to one who worked so selflessly on so broad a scale, I am sure I am expressing the thoughts of many

* Delivered in Philadelphia on the evening of October 13, 1958, at the Annual Meeting of the American Association of Medical Colleges.

members of this audience. The privilege of giving the first Alan Gregg Lecture is for me a very special privilege, indeed.

The title of this lecture is "Education for the Professions in Europe and the United States," but I am not going to start my address by attempting to define a profession. Such an opening would be logical, but highly involved and very dull. Suffice it for me to remind you that, at the time when universities were coming into existence, the learned professions were theology, law, and medicine. They were international in their scope, and so too were the methods of instruction. Of these three professions, only medicine remains international in terms of pedagogic methods. The reformation and subsequent fragmentation of Protestant theology shattered the unity of one profession; the growth of the Common Law in England and the transfer of this type of law across the seas have resulted in quite different methods of instruction being used by law faculties in different lands. In the Middle Ages, a professor of law, or theology, or medicine could move from one university to another with ease. Latin was the official language; the unity of the professional outlook obliterated the boundaries that marked the limits of the domains of different rulers. It is hardly correct to speak of *national* boundaries in those days. Today, also, a member of a medical faculty can transfer from one university to another without difficulty, provided, of course, he can speak the languages of the nations that are involved. The transfer of the academic allegiance of the lawyer or theologian, on the other hand, is limited for the reasons I have given.

Many of the newer professions like engineering, of course, are international in the same sense as is medicine. Indeed, to the degree that they are founded on the advances in natural science, their basic premises and pedagogic methods are essentially the same even on both sides of the formidible frontier of modern times—the Iron Curtain. As contrasted with the Middle Ages, we could say that universities, as the home of the professions, had spread over the entire globe. This is true in a sense. But it is well for medical men, scientists, and engineers to remember that, while the education for their professions is almost indistinguishable from university to university, this is not the case for the other two ancient learned professions. It is also not the case for the professions based on the social sciences, insofar as one is talking about universities in free nations, on the one hand, and universities in totalitarian lands, on the other.

Many here assembled would undoubtedly find differences between the medical education offered in a university in Germany, or Switzerland, or France, on the one hand, and that offered in the United States, on the other. But to me, such differences would be differences in the fine structure of professional education, so to speak. As far as the training of medical men as medical men is concerned, I believe I am correct in stating that there is no significant difference between the courses of instruction in the first-rate universities in Europe and the United States. Yet it is the thesis of my lecture that there are profound differences in the education of the future doctors and surgeons in a European country and in the United States. What do I have in mind? I have in mind all those aspects of education that are not directly professional; I have in mind the way these phases of the educational process are related to the recruitment and professional education of future members of your profession.

Let me remind you of the vast differences between the American pattern of education and what we find in Germany or Switzerland, for example. First of all, there is the basic difference in the concept of a university. In Europe, a university is a collection of professional faculties; enrolment under one of these faculties for purposes of study is open to anyone who holds a state certificate obtained by passing one of three types of closely related examinations. Enrolment is open to any holder, because the university must enroll the applicant. This is true in Germany and Switzerland on a national basis, although the universities are sup-

ported and controlled on a state (or Cantonal) basis. No one other than the holder of the certificate can enroll, of course. Only those who have completed successfully a 7- to 9-year course in one of the three types of pre-university schools can hope to pass the examination for the certificate that admits to a university. Almost all who complete the school course do pass, but the failures during the long school course are heavy. In one Swiss Canton I visited, only a third who entered the pre-university school graduated. And the initial group was carefully selected. Indeed, in Germany and Switzerland (and, indeed, all European countries), not more than a fifth or sixth of an age group are selected for entry into the pre-university schools at age 11–12.

There is no equivalent of the American liberal arts college or the undergraduate departments of a university to be found anywhere in Europe. The American 4-year college is one of the characteristics of the educational pattern which has developed in the United States. The significance of this fact for medical education I shall return to in a moment. But, let me continue to remind you of the features of the European system. If a boy or girl is to receive a university education, the child must be enrolled in a pre-university school at age 10 or 11. In some localities, the age for enrolment is 2 years later and the school course correspondingly shorter. The phrase "pre-university school," by the way, is my own. It avoids using a variety of names for schools that serve the same function in Germany, Switzerland, and France. As I said earlier, not more than a fifth of an age group are enrolled in these schools. The other four-fifths remain in the elementary school and complete their full-time education at 14, except for a small group who may attend a middle school whose course continues for 2 years longer.

According to an estimate I made 2 years ago, something like 5–7 per cent of the male youth of the Federal Republic of Germany were entering a university or its equivalent after completing the pre-university course. The corresponding figure for women was 2 per cent. (These are percentages of an age group, you understand.) The situation in Switzerland is essentially the same. Those who enter the university, for the most part, complete the appropriate professional course. The needs of the nation for lawyers, scientists, engineers, doctors, teachers in the universities and pre-university schools appear to be met by the annual production of this number of professional people (though there is some talk of the need for increasing the number of engineers and scientists).

It is clear that, in Europe, the sorting out of those who are to be members of the professions starts early (age 10 or 11) and continues until the strictly professional studies are started in a university. If the 5–7 per cent of those who enroll in the universities were the top 5–7 per cent in real ability, the situation could be regarded as highly satisfactory. But I know of no European educator who would claim that this was, in fact, the case. Quite the contrary. Thoughtful students of the European system realize what a tremendous waste of talent occurs. There is clear evidence that large numbers of boys and girls with high academic potentialities never start on the long road that leads to the university. Tradition plays a large part in determining who enters the pre-university schools, and the tradition reflects the social stratification of European society. There is little or no flexibility in the system. There are plenty of ways out of the schools which prepare for the universities, but only one way in—namely, the entrance door through which the selected few enter at age 10 or 11.

Those who obtain the certificate to enter a university are, on the average, a year older than those who enter an American college. They are much further advanced, however, in their studies. They have completed their general education, it must be remembered, for the university is essentially the equivalent of our professional schools including the graduate school of arts and sciences. It provides no opportunity for a general or liberal education. The youth who enters a Euro-

pean university will have a command of at least two languages besides his own; usually this will include one modern language. He will have pursued his studies in science and mathematics at least as far as would a second-year pre-medical student in an American college. European history and the literature of his own country will have been studied thoroughly. And all the students will have had about the same exposure to history and the culture of their own country. They will differ in their knowledge of Greek and Latin depending on which one of the three types of pre-university schools they attended. This common knowledge in depth of a particular cultural pattern is significant. It provides for ready communication between university men and women outside of their professional competence. But note well that this common knowledge is provided, not by what was learned in the university, but by what was learned in the pre-university schools.

As a consequence of the sharp division at an early age between those who wish to enter a university and those who do not, European society is split into two cultural groups. The hallmark of one group is easily recognized: the mastery of another language, be it Greek or Latin or one or two modern languages. An educated man or woman is easily identified by this criterion. There is a transitional group, of course, made up of those who have dropped out of the pre-university schools, those few who have attended a middle school, and a very, very few self-educated men and women.

So much for Europe—now let us look at the United States. First of all, contrast the uniformity of the European pattern and the diversity of our own. Let me concentrate attention on the education of the future doctor or lawyer. The training of engineers is another story, since in the United States professional training for the future member of this profession starts immediately on graduation from high school. Let me work backward in the stages of the educational journey of a doctor, noting the differences between Europe and the United States. The student entering an American medical school will have had a pre-medical education in college. This is true, whatever words are used in some institutions to try to cover the fact; this is true, because medical faculties have requirements for admission different, for example, from the law faculty. In Europe, there are no admission requirements for entry into a particular field in a university. It is assumed that all who hold the certificate that admits to a university are ready to take up any line of professional education. They are generally educated young men and women. Please ponder on this difference between Europe and the United States.

A second difference to be carefully noted: in Europe any holder of the certificate admitting to a university who wishes to enroll in a particular university for the study of medicine is admitted. There is no competition between young people for admittance to a *medical* school. (There has been a long hard struggle—competition, in a sense—to obtain the certificate that admits to a university.) The general education of a future doctor in Europe is not influenced by the fact that he is planning to be a doctor! In the United States, the situation is quite otherwise. I am sure I do not have to spell out to this audience all the implications of this contrast. There is no need to remind this audience of the educational consequences of the competition to enter a medical school. In spite of the fine words of admission officers, college students believe that an impressive list of science courses will help them gain admittance. What this belief does to the chances of obtaining a general education, at the college level, only those who have been closely connected with a college faculty can really understand. Remember, please, I am not criticizing; I am describing the road to a professional medical education in the United States, at least as it was 5 years ago.

Let me continue my backward journey—retracing the future doctor's steps—and leave the college where the student has spent 3 or 4 years. Let us enter the high

school. Here diversity becomes so great as almost to defy description. There are over 1,000 colleges or undergraduate liberal arts departments of universities where a student may "prepare" for medical school, but there are 21,000 high schools supported by taxation and thousands more that are not. I shall confine my remarks to the public high schools which accommodate some 90 per cent of those who attend secondary schools and in which many applicants for medical schools receive their first differentiated education. I shall further confine my attention to schools of 400 or more pupils—the smaller schools ought to disappear through district reorganization.

I have been studying intensively public high schools of sufficient size in the past year. The first thing that became clear in the course of the study (or, rather, it became clear organizing the study) was the utter impossibility of generalizing about American public schools. Yet this is what some people have been doing rather loudly since the Russian success with rockets. The question often posed is: Are the public high schools doing a good job? Sounds like a simple question, but is it? Isn't it like asking: Are American cities well governed? Who knows? I could name some that are and some that are not. But I know of no way to generalize or say whether the government of a typical city is good or bad. Indeed, what is a "typical" American city? Is it large or small? The situation in regard to our public high schools is similar. I could name some highly satisfactory schools and some that were far from good. But I know of no way of giving a statistical answer to the general question that would have the slightest chance of being valid.

What one can do rather easily is to note some sharp contrasts between American and European schools. First, outside of the large Eastern cities, there are no public schools reserved for a selected few who wish eventually to enter a university. And, even the selective specialized academic public high schools in the Eastern cities differ in a number of important respects from the European pre-university schools: the course is less rigorous, and those who are failed out of the schools are relatively few. Second, since the next stage following the high school in the educational journey is either a 2- or 4-year college (those who enter an engineering school constitute the exception), the influence of the professional atmosphere of a university is one step removed, as compared with Europe. Thirdly, there is nothing in existence, or likely ever to come into existence, that resembles the national certificate which in Europe entitles the holder to enter any university. The American 4-year colleges and universities are so varied in their nature and serve so many functions that anything approaching a uniform requirement for admission is not even worth discussing. Remember that, in comparison with the European pattern, the break in the American educational system between high school and college is a break in the *general* education of youth and, except for engineers, does not mark the end of a general education. Fourthly, remember that the public high school is locally controlled by a school board. This is a feature of our system that, to my mind, is here to stay. Finally, remember that, unlike Europe where four-fifths of the youth complete full-time education at 14 or 15, a vast majority of our young people stay in school full-time until 17 or even 18. With us, jobs are not available earlier.

What are the consequences of our American system, as far as the general education of doctors is concerned? No need to tell this audience. The first consequence is that you find excellent doctors with the most varied general educational backgrounds. You find the medical schools blaming the colleges for the inadequate preparation of their students, the colleges blame the senior high schools which, in turn, blame the junior high schools or the elementary schools. The inadequacies reported include inability to write English, inability to handle mathematics, inadequate preparation in science, and general lack of ability along intellectual lines. Interestingly enough, one rarely hears

a complaint about a lack of that which, in Europe, is the mark of an educated man—namely, the mastery of a foreign language and the corresponding insight into another culture. If you are one of those who have complained about the education of students who have entered your school in considerable numbers, you probably have your own remedy to prescribe. You may want to attack the question by reforming the college, or the high school, or perhaps both. In the last year, interestingly enough, it has been the high school that has been the chief target of criticism. There are a number of reasons for this phenomenon, but it would take too long to discuss them here.

For my part, I am going to speak briefly about the college and then go on to the high school and try to enlist your support for my program for improving the high school education of future professional men and women. What is clearly needed in the college is an opportunity for the future doctor to continue his general education. The present system of admission to a medical school creates pressures that move a college student into a specialized college education of the wrong type. Years and years ago, I suggested a remedy for the situation and published an article about it in the *American Medical Journal*. This article had, at the time, not the slightest effect. But last Spring, I received a copy of a letter from a member of the medical profession which revived my memory of my suggestion of nearly 20 years ago. I should like to read excerpts from this letter which was addressed to an officer of the Council on Medical Education.

> In view of the bewilderment I see among premedical students, it is astonishing to me that more attention has not been paid to Dr. Conant's recommendation . . . the need of adopting a better system of medical school admissions is more urgent now than it was in 1939 if we, as physicians, are seriously concerned with conservation of human resources.

And the letter concludes as follows:

> It goes without saying that we have an obligation to inspire young people to become doctors by our precept and example, for it is not likely our ranks can be filled in sufficient numbers to care for the world's ills by students whose talents and endowments and interests are uniquely suitable for this. But we are being cruel, certainly wasteful, and probably sinful to dangle the privilege of becoming a doctor before so many and according it to so few when this has the effect of wasting so much life and time. Specious or pertinent though our interests be, none of us, as physicians, should overlook the plight of the premedical student. Let us be as much concerned with what we do to him as what we do for him.

This letter has encouraged me to try again, though I am frank to say I am under no illusion about the consequences of the recommendations I am about to make. Indeed, my remarks of nearly 20 years ago have been so completely forgotten that I have no fear that any of you will charge me with inconsistency. What I now suggest is that a national medical admissions board be prepared to issue a certificate to a college student as early as the end of his freshman year which will enable him to pursue a liberal education in college undisturbed. This bit of paper would certify that the student in question had passed satisfactorily examinations in physics, chemistry, biology, and mathematics and thus demonstrated sufficient knowledge of these subjects to enable him to study medicine with profit. The examinations would be of the new type of achievement tests and would be so arranged that they could be passed by the top 15 per cent of an age group (in terms of academic ability) on the basis of high school and freshman college courses, and by the next 5 per cent on the basis of sophomore science courses. No one would be permitted to take the examination after the end of the sophomore year. The leading medical schools would then have to agree that the holder of this certificate would be admitted without further study of science in college. Indeed, the suitability of the candidate would be determined by his scores on the examination for the science certificate, his grades in nonscientific subjects in the first 2 years of college, and a general scholastic aptitude test

given at the end of the sophomore year. An admission certificate of each particular medical school would be issued, in general, at the end of the sophomore year, but no one would be admitted before the completion of the junior year.

The proposal I have just put forward, if adopted, would greatly affect the college education of the future doctors. It would also, to some degree, affect the high school, too, though to a less degree since those who have any intention of becoming doctors are likely to take the maximum amount of science and mathematics in high school anyhow. What is needed to improve public secondary education for the future professional man or woman is emphasis on a total program. But before I explain what I have in mind, let me tell you on what I base my recommendations. I have spent the best part of a school year visiting some 50 high schools in eighteen of the more densely populated states, asking questions of principals, superintendents, and talking with teachers and pupils in small groups. The schools I decided to visit were of a type commonly found throughout the United States in cities of 10,000–100,000 and in consolidated school districts. They are of size sufficient to provide a diversified program for a diversified student body. The composition of that body in terms of academic ability corresponds roughly to the national norm. Not more than half the graduates desire to go on with education beyond the high school. Such a school, which is known as a "comprehensive" high school, is a purely American invention. It has been widely praised and yet often condemned.

The proponents of the comprehensive high school claim that it can perform three vital functions: (*a*) provide a good general education for *all* the pupils, (*b*) provide a series of elective programs aimed at developing skills directly marketable on graduation, (*c*) provide an adequate academic elective program for the bright boy and girl who wants to go on to college. The critics say this is impossible; one of the three aims, at least, cannot be met, and it is usually (so they say) the education of the bright boy or girl which is totally inadequate.

Confronted with these conflicting views, I decided to see for myself and form my own opinion. I chose schools that had a good reputation but were not suburban schools, and visited a few such schools in states on the East Coast, in the Midwest, and on the Pacific Coast. I chose schools with a good reputation, because what I was trying to find out was whether a comprehensive high school of the type specified existed which was doing a good job in all respects. I was not trying to answer the question as to what fraction of the thousands of comprehensive high schools were good or bad. To try to answer the question would be an impossible undertaking.

I can report that I have found several comprehensive high schools which are doing a satisfactory job in all three respects, as far as the education of the boys is concerned; I have also visited a number of schools which, with relatively minor changes, could be made satisfactory. I have to place one reservation on these findings, and that is in regard to the teaching of foreign languages, about which there seems to be a wide misunderstanding in the United States. But of that, more later.

You may well ask what are the criteria I used in passing judgment on these schools. It would take too long to discuss the vocational programs, and I only want to register my strong opposition to those who say that these programs should be removed from the high schools. Frankly, I don't believe the people who hold this view have even taken the time and trouble to visit the kind of school I have been visiting. As to the general education for all the pupils, it should consist, to my mind, of 4 years of English, 2 years of history, 1 year of senior social studies, and at least a year each of science and mathematics. I am talking about grades nine through twelve. For the top 15 per cent of the student body in the type of school on which I am reporting—the "academically talented"—the program should consist of 4 years of English, 3 years of his-

tory and social studies, 4 years of mathematics, 3 years of science, and 4 years of one foreign language. This makes a total of eighteen year courses with homework in the four years. It is a stiff program and a full one. Mind you, I am recommending this for the top 15 per cent. There may be another 10–15 per cent who can take it, but for the top 15 per cent I believe this program should be a must.

As far as the able students were concerned, my inquiry had two parts. First, were adequate courses offered? Second, were a majority of the bright students electing the courses? To answer the second, we had to invent a procedure, as no school we visited had the facts. We asked twenty schools to help us draw up what we call an "academic inventory" of the school. A list of the top 15 per cent of the graduating class is made, based on a test or tests of scholastic aptitude, and the 4-year programs of those on the list examined. The results for boys and girls must be given separately. The results of making such inventories show a wide variation among schools. It would take far too long for me to analyze the results. The point germane to my talk is that I have found schools in which the full program I outlined a moment ago had been elected by a large majority of the able students. This is a school, mind you, where less than half the graduates were going to college. But I must, in all fairness, return to the reservation I voiced about the study of foreign languages.

In many schools I visited, although they all had a good reputation, instruction in a foreign language was limited to 2 years. Even if the student elected 4 years of foreign language study, the 4 years would be comprised of 2 years of one language and 2 years of another. As a consequence, little if any residue remained in the student's mind after the courses were completed. Now, studying your first foreign language for 2 years in high school and then dropping the subject is very nearly a waste of time. The objective of studying a foreign language is to master it; and, if one language is mastered, knowledge of a second is much easier to obtain even if the language is unrelated. But there seems to be a widespread spirit of defeatism about studying foreign languages which needs to be overcome. And I turn to you gentlemen and the members of the other learned professions to help in overcoming this spirit. I am convinced that many of the most able of the younger generation—the pupils now in school—would like to master a foreign language. More than once, when I asked a group of such students why they had not gone on to a third year of a foreign language, the reply was, "We wanted to, but there were not enough of us to make up a full class, and the school board wouldn't authorize the course."

One of the most urgent changes needed in many schools is the offering of a third and fourth year of a foreign language. If this were done in many of the schools I have seen, I feel sure a considerable portion of the academically talented pupils would elect these courses and, in so doing, have the full program of academic subjects to which I earlier referred.

In suggesting that the members of this audience and your professional colleagues could render assistance in this matter of the study of foreign languages, I really have in mind a much larger issue. I believe that the members of the learned professions—particularly law and medicine—can influence public opinion greatly in educational matters. This influence could be, in fact, the result of collective action and certainly can be the result of individual action. By collective action, I have in mind the formulation of policy statements by professional groups. For example, what a help it would be to those who are trying to improve the instruction in foreign languages if some expression of opinion were forthcoming from doctors and lawyers that the future members of these professions ought to have at least a fair mastery of one foreign language. It is perhaps fanciful to think further in this direction, but it is conceivable that some standard for the pre-professional education of doctors and lawyers might slowly become accepted in the United States. Develop-

ments in this direction would mean that, by the end of the sophomore year in college, a young man or woman who aspired to become a member of a profession would have completed a basic general education which included a thorough discipline in English composition, something approaching a mastery of one foreign language, knowledge of mathematics and science through the elementary calculus and first-year college physics, as well as a generous amount of time devoted to history and related social sciences.

Such a pre-professional general education as I have just outlined would, of course, have to start in the 9th grade. On graduation the boy or girl in question would have to have completed a full program of academic subjects I mentioned earlier—a program, mind you, that in some schools I have visited was already in operation for nearly all the academically talented boys. From what I have already said, it will be evident that, as a result of my study, I am convinced that a comprehensive American public high school of sufficient size can provide, without any radical changes, a satisfactory education for the future member of a learned profession. Some I know are now fulfilling this function; some I know are not. The question, then, is how to improve the poor schools and make them good. And this is where the individual actions of members of the learned professions become important, because improvement can come only state-by-state and school-by-school as a result of wise and informed citizens' concern. In many states, the first order of business is to eliminate the small high school by district reorganization. This has been done in California and New Jersey. It will take a vigorous action by citizens in some states, however, to bring about the change. The second thing that must be done is to see to it that, in those districts that have high schools of sufficient size (there are about 4,000 of them now in the entire United States), a first-rate school board is elected which will appoint an excellent superintendent. The third thing that must be accomplished is to persuade the people in the community that the education of the future professional men and women is a matter of importance. Further, that, since these people will come from the 15 per cent of the youth who have special aptitude for academic subjects, the programs of study of the members of this group should be stiff academic programs. The school board supported by the citizens should urge the "academically talented" youth to elect this type of program.

I have used the expression "wise and informed concern" in connection with the role the citizen should play in his state and local community in the attempts to improve the schools, for if an individual is to be effective in public school affairs he or she must have a considerable understanding of the complexities of the American educational picture. One must realize first of all that different types of communities present somewhat different problems. A high income suburb is not the same as a small industrial city or a consolidated rural district. Therefore, the high schools are not, and should not be, the same. Above all, one must realize that the United States is not a European nation; the structure of our society, our labor laws, our apprentice system, our entire social and political history have no equivalent anywhere in the world. Therefore, our public secondary education and our colleges and universities find no parallel in other countries. This fact and its bearing on education for the professions have been the central theme of my remarks. American schools are not European schools, because the United States is not Europe. In other words, to understand secondary education one must seek to understand the particular society which the schools must serve. One concrete illustration and I am finished with an address already far too long.

Except for a few large cities in the East, where traditionally specialized academic high schools have flourished, a public high school must accommodate a wide variety of talents. In no school of sufficient size is there likely to be more than half the students whose potentialities are such that one could

designate them as "academically talented." In a school with an average distribution of ability, the number of such students would be about 15 per cent. These are the schools from which a large number of the future members of the learned professions will come. I make this last statement on the basis of some figures compiled from the enrolment in seven medical schools—Harvard, Columbia, Chicago, Wisconsin, Minnesota, and the University of California at Los Angeles and in San Francisco. The majority of the students in all these schools were graduates of public high schools. In four of the seven schools, 80 per cent and more of the students were from public schools. And of the public high school graduates, nearly a half had attended schools of the type I am mentioning, as far as one could judge from the size of the community in question. Incidentally, the figures for Wisconsin and Minnesota are interesting in connection with a point I made a moment ago in regard to the small high school. Although in these two states over 50 per cent of the youth are attending small high schools, these small schools contributed only about a fifth of the student body of the medical schools.

It is obvious, then, that, to a considerable degree, the ranks of your profession are filled by those who have received their schooling in the kind of comprehensive high school I am here discussing. These schools are unlike the pre-university schools of Europe in that the student body is far from homogeneous as regards academic ability and ambitions. (Even the suburban high schools are heterogeneous as regards academic ability, though they may be homogeneous as regards the collegiate ambitions of the parents—which fact presents a problem!) In addition to those academic courses required of *all* (English, history, elementary mathematics, and science), there must be a variety of elective programs. To assist the student and the parents in selecting the elective courses, a well trained counselor should be at hand. For a high school to be satisfactory, there should be one counselor for every 300 pupils. Of that I am quite convinced. And I may remark parenthetically that the counselor will be particularly effective in guiding and stimulating that small group of students often designated as the "highly gifted" who can often do college freshman work in the last high school year.

To those who are informed about American schools, a good counseling system is obviously the keystone of the order of public education. To those who have no acquaintance with the realities of the situation, counselors may seem to be unnecessary, perhaps a "frill," a waste of money. This one example will suffice to illustrate what I mean when I appeal to you and the other members of the professions to be active as "informed" citizens in supporting and improving our public schools. Through membership on a state citizens committee or a local citizens committee, a professional man can have great influence on the developments in public education. As a member of a local school board, he is in a position of strategic importance, for it is one of the characteristics of our system, you will recall, that the sum of the decisions of thousands of school boards determine the nature of American public secondary education. And these decisions, to a large degree, reflect the opinions of the communities which the schools in question serve, which, in turn, may well be greatly influenced by the thoughts of a few leaders. And for leadership, can a community do better than to turn to its respected professional men? Indeed, to this audience I venture to suggest, can it do better than to turn to its dentists, surgeons, and physicians? This being the case, I need not spell out how, by individual action, the members of the medical profession can improve education for their profession in the United States. I conclude, therefore, with an appeal to the doctors of this country to be informed and concerned with the future of our tax-supported schools; to those of you already so engaged, I can only say, more power to you and may you enlist your friends!

Dr. John Delamater, "True Physician"*

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In 1865, at the end of his life, nearly 80 years of age and in failing health, Dr. John Delamater of Cleveland was succored financially by his professional colleagues who, in addition to giving him a homestead, testified that "The life of John Delamater is a most beautiful illustration of the life of the 'true physician,' embodying all the attributes of a noble man, a sincere Christian and the refined professional gentleman; that its examples are worthy to be emulated by all good men in and out of the profession. *Resolved*, That as a physician and a teacher of the medical sciences he has never had a superior, and that the profession owes him a debt of gratitude for the many expressions of ripe and valuable experience, and the sound teachings which hundreds of pupils have received during his long professional career, which can never be cancelled."[1] Such a testimonial was by no means an assemblage of platitudes. It expressed sentiments of sincerest admiration and respect for an elderly teacher whose unselfish generosity in his productive years had prevented him from insuring his own financial security.[2]

JOHN DELAMATER

What need did John Delamater fill in the American medical world of his day, that his eulogist in the *Transactions of the American Medical Association* could characterize him as "one of the noblest men and most eminent practitioners of the age"?[3] The answer is not difficult. Like other medical heroes, he personified current ideals of professional knowledge and demeanor, and he effected a successful compromise between old ideals and new demands, whereby he became a recognized leader. He was also an exceptionally gifted teacher, whose fluent and clear exposition of nearly every branch of medicine and whose mature, humane personality left an indelible imprint on his students. Furthermore, he was a gifted teacher

* This is the fifth in the current series of biographies of eminent medical educators.

[1] Delamater Testimonial. May 20, 1865. Preserved at the Western Reserve Historical Society Library.

[2] "I will look on him who taught me this art as I do my own parents, and will share with him my livelihood. If he be in need, I will give him money." The Hippocratic Oath.

[3] *Trans. A.M.A.*, 19:427, 1868.

at a time in the history of American medical education when the undisciplined growth of the American nation imposed severe strains upon its standards.

Americans do not need to be reminded in detail about the course of events in this country during the life span of John Delamater, from 1787 to 1867. The significant occurrence was the western migration of the population, from the Eastern seaboard, which led to the gradual settlement of the entire continent from the Atlantic to the Pacific. The new communities and the expanding population created a continuous demand for more physicians. This was occurring in a newborn country which had not yet developed firm traditions and where there was a passion for individual freedom and self determination.

Before the Revolution the great majority of physicians had been educated as house pupils of practitioners, and only a privileged few went to Europe for more formal training and secured the medical degree. On the eve of the war the first American medical schools had been created in Philadelphia and New York.[4] They were modeled after the most advanced European school, the University of Edinburgh, and were integral parts of stable academic institutions. After the war medical colleges began to spring up in all parts of the East and to follow the course of westward migration. Most physicians now desired the title of Doctor of Medicine which only a college diploma could confer, although they still acquired their practical training with private preceptors. In populous areas groups of practitioners joined together to create medical schools, and, since the right to confer degrees required a legal charter from the state, they sought to affiliate with pre-existing liberal arts colleges or universities. However, the connection was only nominal in most instances, and there were rarely any mutual financial obligations.[5]

The very high standards of the first American medical schools soon dropped as they began to compete for students and as the special features of the American environment began to exert their effects. Feelings of nationalism combined with glorification of freedom to reject traditions which originated across the Atlantic. In 1847 Dr. J. K. Mitchell, Professor of the Practice of Medicine at Jefferson Medical College in Philadelphia, told his students that American physicians need not draw their rules from the "conservative wisdom of the old world." "Our institutions, our climate, our people," he asserted, "are peculiar, and peculiarly as a nation are we situated. Ours is a land of progress; one in which men are to reach their ends by new and untried paths. The slow movement of European systems suits us not."[6]

In recently settled areas west of the Appalachians the sparseness of the population, its low economic status, and the lack of social stability affected all types of education. Primary education was frequently rudimentary or nonexistent; a classical education was considered useless in an environment where the plow and the axe were the chief tools. Practicality dominated not only social but also intellectual life. The acquisition of knowledge which did not serve any useful purpose in earning a living and advancing one's status in society was considered unnecessary, and the few liberal arts colleges were intended primarily for preparation for the church.

Medical educators before the Civil War constantly deplored the incomplete preliminary training of their students who sometimes could neither spell nor write correct English, not to mention their ignorance of geography or mathematics.[7] "As to classical

[4] See G. Miller, Medical Education in the American Colonies. *J. M. Educ.*, **31**:82–94, 1956.

[5] An excellent general description of American medical education during the first half of the 19th century is given by William Frederick Norwood: American Medical Education from the Revolutionary War to the Civil War, *J. M. Educ.*, **32**:433–47, 1957.

[6] J. K. Mitchell, Lecture introductory to the course on the practice of medicine in the Jefferson Medical College, delivered November 2, 1847, pp. 23–24. Philadelphia, 1847.

[7] R. L. Howard, lecture, introductory to the course in the Starling Medical College, of Columbus,

learning," lamented Dr. Thomas D. Mitchell at Cincinnati in 1832, "that has long since been laid on the shelf, as unimportant, or useless."[8] Eastern professors like J. K. Mitchell of Jefferson Medical College urged his Western students to complete their language deficiencies in school recesses. "Indeed, until, with laudable zeal, he [the Western student] emerges from the grand old woods, or leaps from the boundless prairie, he is ignorant of the great value to him of Latin and Greek, and of the *still greater* importance of French and German."[9]

John Delamater was a medical educator who constantly sought to maintain the highest standards of professional education and conduct during this period of instability. In New York State and Ohio he taught hundreds of physicians who served the frontier communities as general practitioners, and a number of them pushed further west and helped to create new schools. His teaching was in such great demand, both in the East and the West, that he held professorships in nine different medical colleges in seven states. He ended his career in Cleveland, Ohio, where in 1843 he helped to create the Cleveland Medical College, now the School of Medicine of Western Reserve University, which he served as Dean for 17 years.

Born near Albany in Chatham, New York, not far from the Massachusetts border on April 18, 1787, John Delamater was descended from a French Huguenot refugee, Claude Le Maistre, who had come to New Netherlands in 1652 and had settled in Harlem.[10] His children intermarried with the Dutch settlers, and John Delamater, six generations removed from his French ancestor, bore the features of a Dutch burgher. His father, Jacob, was a prosperous farmer who had married Elizabeth Dorr. His parents, wishing John to enter the church, had him taught by a local minister who had received a good education in Europe. John, however, preferred to study law, and finally a compromise was reached in medicine, a profession espoused by three uncles. One of them, his mother's brother, Dr. Russell Dorr (1771–1824) of Chatham, became his preceptor for 3 years, from 1804 to 1807, when he received his license to practice medicine from the Medical Society of Otsego County, New York. For 8 years Delamater was in private practice with various relatives in Chatham, Florida, New York, and finally Albany, where he remained only 1 year before moving in 1815 to Sheffield, Massachusetts. It would appear from his frequent moving that it was difficult for a young physician in that region to make a living, and his "Reminiscences of Country Surgery" compiled late in life, described the one-room uncurtained house which was his residence in 1811 in Montgomery County, 20 miles from Schenectady.[11] During his 10-year stay in Sheffield, he began to teach private house pupils, and in 1819 he helped to revive the Berkshire District Medical Society.

In 1822 at the instigation of Dr. Henry H. Childs of Pittsfield, Massachusetts, the Berkshire District Medical Society successfully petitioned the state legislature for a charter and endowment to establish a new medical school in western Massachusetts.[12] John Delamater, who had established his reputation as a very successful preceptor, was asked to fill the chair of materia medica and pharmacy when the Berkshire Medical Institution opened its doors in Pittsfield in

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p. 8. Columbus, 1849; Danial Drake, An introductory lecture, on the means of promoting the intellectual improvement of the students and physicians, of the valley of the Mississippi, p. 11. Louisville, 1844.

[8] Thomas D. Mitchell, *Hints on the connexion of labour with study, as a preventive of diseases peculiar to students*, p. 46. Cincinnati, 1832.

[9] J. K. Mitchell, *op. cit.*, pp. 15–16.

[10] Details about Delamater's life have been painstakingly collected by Frederick C. Waite: John Delamater, Educator and Physician. Founder of School of Medicine of Western Reserve University. *Bull. Acad. Med. Cleveland*, **14**: 18:20, 1930. See also F. C. Waite, *Western Reserve University Centennial History of the School of Medicine*, pp. 74–78, 465–67, Cleveland, 1946.

[11] *Cleveland M. Gazette*, 1:317, 1860.

[12] W. F. Norwood, Medical Education in the United States before the Civil War, pp. 211–12. Philadelphia, 1944.

1823. He had no professional degree, but at the end of his first academic year he was awarded an honorary M.D. from Williams College under whose charter the new medical college granted its degrees. For his first year of teaching, he received $240, or about $15 a week, since the school term lasted 16 weeks or less. In 1826 he added obstetrics to his teaching schedule.

The second phase of Delamater's career as a teacher began in 1827 when he was invited to be Professor of Surgery at the College of Physicians and Surgeons of the Western District of New York, a very prominent medical school located at Fairfield, Herkimer County, not far from Utica. Fairfield, the business and political center of the territory originally called the Royal Grant lands, was situated on a busy crossroads which invited settlers, and as early as 1803 the population had grown so that an academy was created to bring culture to the community. In 1812 a medical department was chartered by the Board of Regents of New York, and outstanding teachers like Dr. Lyman Spalding, later the author of the first American pharmacopoeia, Dr. John Stearns, founder of the Medical Society of the State of New York and of the New York Academy of Medicine, and Dr. T. Romeyn Beck, later the author of the first American textbook on medical jurisprudence, had brought the school an illustrious reputation. That Delamater was invited to teach there was ample indication of the esteem with which he was regarded, and the school reached the height of its popularity with 217 students in 1833 when he was on the staff. He possessed an uncommon command of English combined with a clear mind and a never failing memory which made his lectures a joy for listeners. As one contemporary wrote, "The lecture room was the center and substance of his life."[13] When a Utica man sought medical advice from Dr. James Jackson, a professor in Harvard Medical School, he was told, "You have no need to write to me. You have Dr. Delamater near at hand, than whom there is no abler practitioner in the country."[14]

During the Fairfield years Delamater was constantly asked to lecture in other medical schools. While the usual school term began in November and concluded in February, some schools had sessions at other times in order to include distinguished teachers from other regions. Delamater gave such lectures in Bowdoin College, Maine (1829–1834; 1840–1841); Dartmouth Medical School (where he was a colleague of Oliver Wendell Holmes who remarked that Delamater's lectures "were as lucid as the water of a mountain spring") 1836–1840; the University of Vermont; the Medical College of Ohio at Cincinnati (1838–1839); and the Medical Department of Willoughby University of Lake Erie at Willoughby, Ohio (1838–1843). His skill in surgery brought him a national reputation, although he did not report his cases, and his obituary in the *Transactions of the American Medical Association* stated that "Hundreds who have listened to him in the lecture-room will remember with what extreme modesty he used to make mention of his operations for excision of the scapula—an operation he was the first to perform in this country."[15]

One wonders today how a general practitioner with a busy local practice could have found time to teach not only locally but also in distant states. Indeed, in many instances medical college professors did not reside in the towns where they taught. It was told of Delamater that after lecturing 2 or 3 times a day at the Berkshire Medical Institution in Pittsfield, he rode late in the afternoon to Sheffield where he resided 20 miles distant, made calls on patients until late at night, arose at dawn, and breakfasted at Stockbridge while making notes of the lectures which he would deliver that day.[16]

[13] Anonymous holograph biographical sketch, dated October 26, 1873, preserved at the Western Reserve Historical Society Library.

[14] William H. Goodrich, Sermon delivered at the funeral of John Delamater, M.D., LL.D., in the First Presbyterian Church, Cleveland, April 2, 1867, p. 6. Cleveland, 1867.

[15] *Trans. A.M.A.*, 19:426, 1867.

[16] Goodrich, *op. cit.*, pp. 11–12.

During his last years at Fairfield he also taught obstetrics, gynecology and pediatrics, and for several years he conducted a private medical school at Palmyra, N.Y., where he lectured on all subjects of the medical curriculum.

Meanwhile in 1834 a new medical school had been created on Lake Erie by Fairfield men who had migrated westward and settled in northeast Ohio in the area formerly designated as the Western Reserve of Connecticut. Naming their town (formerly Chagrin) and school for Dr. Westel Willoughby, one of the prominent Fairfield professors, they organized the Medical Department of Willoughby University of Lake Erie to which John Delamater was soon called as Professor of Theory and Practice of Physic, Pathological Anatomy, and Obstetrics in 1838. He still continued to live in New York state and to teach regularly at Fairfield and at Dartmouth, but in 1840 when competition from other schools forced Fairfield to close its doors, he moved his residence to Willoughby, declining offers to teach in Cincinnati, New York, and Philadelphia, since he preferred life in the country. After moving to Ohio he also taught in the Medical Institution of Geneva, Geneva, New York (1840–1843) and in Franklin Medical College, St. Charles, Illinois (1842–1844). In 1842 he moved to Cleveland, then a town of 8,000, where he remained for the rest of his life and ceased his peripatetic existence.

The Willoughby school, unstable from the very beginning, had increasing faculty dissension, and in 1843 Delamater resigned, together with Dr. Jared P. Kirtland, one of the leading scientists of his day in Ohio, and two former Fairfield students, Dr. Horace Ackley and Dr. J. L. Cassels. This group disapproved of the lowering of educational standards at Willoughby and decided to create a new school in Cleveland. Application was made to Western Reserve College at Hudson, Ohio, 26 miles south of Cleveland, to become its medical department, and after certain legal difficulties were solved the Cleveland Medical College was officially established on March 20, 1844. Although tradition has credited Delamater with the initiative in founding the new Cleveland school, recent evidence indicates that his more aggressive and forceful pupil, Dr. Horace A. Ackley, was probably the moving force.[17]

This school possessed the qualifications necessary for stability and permanence. Unlike a country medical college like Fairfield, which disappeared when the village in which it was located ceased to be a center for trade on a busy highway, the Cleveland Medical College was established in a growing city which could provide adequate financial support and clinical facilities. Furthermore, it was stabilized through its affiliation with a strong pre-existent institution, the Western Reserve College, which had been founded in 1826 and which continues today as Western Reserve University.[18] Finally, its faculty was of the highest professional caliber. The original four ex-Willoughby men were joined by Dr. Noah Worcester, a pioneer American dermatologist who had studied in France and England, Dr. Samuel St. John, Professor of Chemistry, Geology, and Mineralogy of Western Reserve College, a Yale graduate who had also studied abroad, and Dr. Jacob J. Delamater, the elder son of John Delamater, who had just received his M.D. at New York University. For 13 years this group of outstanding teachers remained together (with the exception of Dr. Noah Worcester who died prematurely in 1847), and molded a medical college of exceptional strength. One of their students in the session of 1851–1852 related the following description of Dr. Delamater's lectures:[19]

> The Faculty then comprised Drs. Ackley, Cassels, DeLamaters, father and son, Kirtland and St. John, all men of mark in their various

[17] For details see F. C. Waite, *Western Reserve University Centennial History of the School of Medicine*, pp. 88–89.

[18] The beautiful original buildings may still be seen today as part of Western Reserve Academy in Hudson, Ohio.

[19] J. Edwards Ingersoll, *The Life and Character of John DeLamater, M.D., L.L.D.* [*ca.* 1880], pp. 14–15.

departments. I recall the language and style of Dr. John DeLamater in his lectures, all that a student could desire in simplicity, directness and completeness of the subjects presented. If the student sat only to be entertained by showy rhetoric, he would be disappointed. If his object was to learn what medicine as a science, and the practice of medicine as an art had to offer, told in language plain, sufficient, but never expletive, and in the modest, quiet tones and manner of a fireside talk, then could he sit charmed for the hour, while the head bowed with the weight of its sound grain, and from a face beaming with goodness and grace, opened a mouth which 'distilled its speech as the dew.' It was my habit to take minutes of the various lectures which I attended seeking to so condense the remarks of the professors, that by a few minutes' review on the following day, I could come fresh to the 'quiz,' and to the resumption of the subject under study. But such was Dr. DeLamater's style for simplicity, dispersing with all superfluous words, and using the plainest directest Saxon to formulate his ideas, that, although the Doctor was rather slow of speech, yet I found in my experience that it was beyond the power of my note-taking to capture all the ideas given in a lecture. They were already condensed. And when a subject had been finished, so far as it was possible to deal with it in a course of lectures, the student who had made himself the recipient of what had been said, felt that, whatever might be desired more in order to become familiar with the detail, nothing was to be eliminated, even a word, from what had been given. Dr. DeLamater had no inclination to adopt or delight in that style of language which was satirized so tartly by the famous Frenchman, who defined it to be 'a garment for the concealment of ideas.'

It is clear that Dr. Delamater's role, after settling in Cleveland, was that of the elder medical statesman whose illustrious name and wise medical counsel were valued by both the medical and lay community. He limited his practice to the city and its immediate vicinity,[20] but he was widely sought as a consultant by physicians from all parts of northern Ohio. His conscientious attention to detail is seen in the following letter:[21]

Cleveland, Aug. 26, 1861

Dr. John French—

Dear Sir—I took liberty a few days since to address to you some professional advices designed for the benefit of Mrs. James Brown of your township.

For want of time the letter, above named, was not so full in details as I wished, and I now propose to supply the deficiency—I have written out some formulae on a separate slip, which I enclose herewith, to which I shall make reference in what follows—My advice is that the Solution of Strichnine named in that slip be procured, and, also, the Extract of Conium—and also a small bowel syringe in good working order, and having a smooth pipe, to hold about a gill—It is advised that Mrs. Brown take of the Solution of Strichnine 3 times daily, as follows: each dose the first day to be 10 drops in 2 or 3 tablespoonfuls of water, each dose 2nd day, to be 11 drops—3rd day each dose 12 drops—4th day each dose to be 13 drops and so on increasing from day to day.

Some preparation of Iron, may be added to each dose of the Strichnine—If the patients bladder is not irritable she may add the Tincture of the Muriate, but if her bladder continues to be irritable as when I saw her, she may omit the Tincture, & procure and take the Syrup of the Iodide referred to on the separate slip enclosed herewith—the dose of the Iron in either case to be 10 drops with each dose of the Strichnine,—Increase the Strichnine, in the manner directed, until relief is obtained, or slight cramps and prickings of the muscles are induced—probably these will appear first in the nape of the neck, or about the face—may be, however, in the extremities or other parts. Then omit it.

In my previous letter I have advised aspersions of warm or cool Solution of Common Salt in Water to be used alternately upon the back and hips posteriorly, and the abdomen and pelvic region anteriorly followed always by frictions with coarse towels, or drying by towels and applying frictions by means of a coarse flannel mitten.

After pursuing the aspersions for a time, these may be omitted and sits baths resorted to instead—the baths may be temperate at first,

[20] *Cleveland Daily Herald*, July 21, 1843.

[21] Preserved in the Howard Dittrick Museum of Historical Medicine, Cleveland Medical Library.

but gradually taken colder—She may also procure a female Syringe, by means of which she may throw into the vagina three or four Syringe fulls of the same Solution of Alum above named morning and evening daily—

Further; form an Enema (Bowel injection) of thin Starch and the Extract of Conium in the proportions of 3 tablespoonfuls of Starch and as much Conium as will allay all pain about the hips and belly—say 20 drops or more, may be 30 or 40 drops of the Conium in each Enema. and throw such a dose into the lower bowel about 9 oclock A.M. and 9 oclock P.M. daily so long as the pains in those regions may continue to require it—These Enemas are designed to be retained, & not to be thrown off.

If the bowels should not be soluble, procure the Tincture of Senna & Jalap named on the accompanying slip and take as much of it at bedtime daily or whenever needed, as may be necessary to ensure soluble bowels—but by no means take so much as will act as a cathartic—usually half a teaspoonful to a whole teaspoonful diluted in a spoonful [*sic*] of water will be required.

All of which is most respectfully submitted by Yours truly,

Dr. Jno. Delamater

Delamater was an acknowledged authority on gynecology, of which he was professor at the Cleveland Medical College, and one of his very few published articles was a lengthy legal deposition in defense of a colleague accused of professional negligence in a case of inversion of the uterus.[22] This contained a detailed review of current literature on the subject In fact, he was famous for his grasp of current medical literature which he remembered accurately and was able to recall at will.[23] His skill as an obstetrician was such that nearly 20 years after his death, on the occasion of laying the cornerstone of the new Medical College building, one of his former students remarked that "Dr. Delamater was so well and favorably known that every man would take off his hat at the mention of his name and I am sure that every lady would take off her bonnet as a tribute to this great man's skill."[24]

Delamater, always modest and retiring, was constantly placed into positions of responsibility by his colleagues. During the second term of the Cleveland Medical College he was made Dean, a position which he filled reluctantly until he retired in 1861. It is clear that the position was largely honorary, and perhaps to advertise the school, since the records do not indicate that Delamater assumed actual leadership in school projects. Similarly, he served on a number of important committees of the Ohio State Medical Society, but he never would consent to hold any office. Unlike Dr. Daniel Drake, his contemporary in Southern Ohio and Kentucky, with whom he has frequently been compared in histories of American medical education, he was not an organizer and initiator. He should rather be called a conservator, one imbued with the finest traditions of the past who constantly recreated those traditions in his professional life and conduct. Moreover, he embodied personal virtues which endeared him to every community in which he lived. In both Sheffield and Fairfield the townspeople wanted to build him a house, so that he would remain permanently in their midst.[25]

The few personal anecdotes which survive reveal him as a Christ-like figure, kind, plain, honest, faithful, compassionate, and charitable. A deeply religious man whose day began with family prayers and scripture-reading, Delamater grounded his actions in Christian piety and charity. His "genuine and thorough piety" was regarded by his pastor as the foundation of his whole character.[26] Like all truly great physicians

[22] Dr. Fisher's Case. *Cleveland M. Gazette*, 1:285–300, 353–69, 1860; 2:91–101, 138–51, 273–82, 321–29; 3:113–14. Other gynecological articles were: Mammoth Tumor. *Cleveland M. Gazette*, 1:31–40, 1859; Letters on ovarian tumors appended to the Report of the Committee on Surgery of the Ohio State Medical Society. *Trans. Fourteenth Annual Meeting Ohio State Med. Soc.*, pp. 116–22. Columbus, 1859.

[23] Dudley P. Allen, Pioneer Medicine on the Western Reserve. VIII. *Mag. Western History* [*ca.* 1887], p. 794.

[24] E. D. Burton, *Cleveland Leader*, July 11, 1885, cited by Waite, *Western Reserve University Centennial History of the School of Medicine*, p. 77.

[25] Ingersoll, *op. cit.*, pp. 13–14.

[26] Goodrich, *op. cit.*, p. 13.

he healed through the insight and power of his personality. As one disciple wrote, "The good man, from the kindness of his heart, overflowing with sympathy, poured into the wounded hearts of his suffering patients, the rich oil of religious consolation and the soothing power of Christian faith, as freely and as unostentatiously as he applied his scientific remedies for their diseases."[27] Always faithful to his patients' needs, in critical cases he stayed overnight with them, sleeping on the floor with his saddle-bags as a pillow if the country dwelling did not have another bed. He confided once to a friend, "Through my most active years I never went to bed without the consciousness that I had done that day, all that any man could require of me, professionally or otherwise."[28]

Delamater lived and taught at a time when American medicine was completely undistinguished. Modern scientific medicine was just beginning in European research laboratories. During his lifetime the uncertainty of medical knowledge was one of the greatest problems facing the profession, for it made them vulnerable to quacks, faddists, and systematists like the proponents of homoeopathy, hydropathy, or botanic medicine. The public in general had little confidence in orthodox medicine. "Need we be surprised," stated Dr. H. H. Childs at Willoughby in 1844, "that intelligent men extend to the profession a hesitating and doubtful confidence, when educated physicians differ so widely among themselves, avowing the most opposite views, both in theory and practice. . . . That 'Doctors disagree,' has passed into a proverb."[29] The physical sciences had already developed to the point where they were being applied for the increase of man's comfort and prosperity, but the study of human biology was still retarded. The method of careful clinical observation, which had been developed at Paris and which exerted the chief influence on American medical thought during this period, while useful for differential diagnosis of various diseases, was unable to penetrate the mystery of their cause.

In addition, the crudeness of American frontier life tended to corrode the professional demeanor of physicians,[30] and the anti-aristocratic ideals of democracy conflicted with the maintenance of an intellectual aristocracy such as the learned professions necessarily create. Delamater, however, steadfastly maintained the old ideals of intellectual competence and gentlemanly behavior. He was accepted and revered because he inspired confidence and respect. For his time, he was the ideal physician. This, together with his great natural gifts of fluency and clarity of thought, drew hundreds of students to him, both privately and in the medical colleges, idealistic young men who also wished to preserve the worthiness and dignity of the profession.

When the *Cleveland Medical Gazette* was founded in 1859, a woodcut of Delamater was carried on its first seven issues in honor of Cleveland's leading physician. In 1860 he was awarded the honorary degree of Doctor of Laws by Western Reserve College. Although he retired from teaching at the Medical College in 1861 at the age of 74, on account of poor health, during the Civil War years he filled in for absent professors. He died on March 28, 1867, almost at the age of 80. During his last year of life as his physical powers slipped away his mind and judgment remained sound, and his patients still sought at his bedside that comfort and help which he had always faithfully given.[31]

[27] Ingersoll, *op. cit.*, pp. 9–10.

[28] *Ibid.*, p. 12.

[29] H. H. Childs, *Introductory lecture before the Willoughby University*, p. 13, 1844.

[30] Read, for example, the disgusting picture of a colleague's office, in *Daniel Drake, an Introductory Lecture, on the Means of Promoting the Intellectual Improvement of the Students and Physicians, of the Valley of the Mississippi*, p. 12. Delivered in the Medical Institute of Louisville, November 4th, 1844. Louisville, Ky., 1844.

[31] Ingersoll, p. 16.

Visual Teaching Aids in a Gynecological Department

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For several years we have worked together to produce visual teaching aids for use in the gynecological department of Durham University. We believe that these aids, as far as they relate to clinical gynecology, have a limited though important place in the undergraduate teaching program. From the outset our approach has been cautious; the material has been carefully selected and prepared and has always been coordinated with the other methods of teaching used in the department.

It has been our experience that visual aids such as we describe, if they are to be used to the greatest advantage, must be available in the gynecological ward rather than in an adjacent medical school or departmental headquarters. We have fortunately been able to plan and equip a teaching room in the gynecological ward in the Royal Victoria Infirmary; the room is illustrated and described in this article.

Color transparencies.—A library of 2×2-inch color transparencies forms the basis of our collection of visual aids. The library is constantly under review. New transparencies may be added or old ones replaced as better examples of certain conditions become available. Expansion has been slow and deliberate, and the selection of material for inclusion in this library is at the discretion of two or three senior members of the gynecological staff. Great care is taken in the production of the individual transparency. The gynecologist must help the photographer choose the best angle, perspective, etc., if the transparency is to be an accurate worth-while record. The photographer must be capable of producing a transparency of the highest technical quality. These points are illustrated in Figure 1. Our library of color transparencies is stored in the ward teaching room in a viewing cabinet with sliding frames (Figure 3). The frames, each of which holds 90 transparencies, slide across in front of an illuminated glass screen and are easily and quickly inspected. We find this method of visual storage most convenient; members of the staff can quickly choose the correct transparencies to illustrate their lectures or tutorials.

The color transparencies are taken on a Leitz bellows equipment fitted with a sliding copier or reflex housing using a 13.5-cm. Hektor lens. The camera is held on a single pillar stand with the lens as close as possible to the surgeon's eye position and is focused and framed visually with a 5× magnifier. A single flash bulb is used in a hand-held reflector gun positioned carefully before each shot to avoid intrusive reflections or shadows. A transparent shield is used on the bulb, and it is generally held relatively close to the lens axis. The guide number on Kodachrome A is about 40, so that small stops are possible giving adequate depth of focus. Black and white negatives are made from the color transparencies on quarter-

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plate Plus X film, with the use of the Valoy enlarger equipped with a Chance ON20 heat filter and a Wratten No. 11 green filter. These are developed for about half to three-quarters the normal time in D.76 or Microdol to give a negative which will print on Grade 2 bromide paper. All the black and white clinical photographs shown in this article have been made in this way.

The transparencies are used in a variety of ways. In systematic lectures to large numbers of students they are projected onto a screen in the lecture theater. When used in tutorials with small groups of students the transparencies are viewed on the Leitz Prado table viewer (Fig. 15) in the ward teaching room. We have been much impressed by the efficiency of this small instrument; the enlarged image can be viewed simultaneously by six to eight students.

In our library of transparencies we have purposely included several examples of each of the common gynecological conditions encountered in clinical practice; this has proved to be most useful. Students in the course of a teaching session in the ward may see a case of cervical erosion. In the ward teaching room, afterwards, they can be shown several examples of cervical erosion (Figs. 2–4) and in this way may appreciate more readily that any one condition can present in different degrees and in various ways.

Similarly, the student can be given the opportunity of comparing and contrasting the appearances of two conditions, e.g., cervical erosion and early cancer of the cervix (Figs. 5 and 6). In the teaching room, with the Leitz table viewer, a few examples of each of the two conditions can be shown. The transparencies can be viewed carefully and repeatedly, and there is an ideal opportunity for discussion.

When the principles of the common gynecological operations are being discussed with small groups of students we find that a series of six to ten color transparencies is in many ways preferable to a short cinefilm (even though the film be run several times). Each transparency can be "held" on the Leitz viewer or screen for several minutes if necessary, while discussion takes place. A film, on the other hand, is shown so quickly that neither lecturer nor audience has the same opportunity for discussion while the image is on the screen. Figures 7–12 are taken from a series of color transparencies and show some of the main steps in the operation of posterior colpo-perineorrhaphy.

Panel demonstration.—In a previous communication (Russell *et al.*, 1956) we described briefly the preparation and presentation of this type of visual aid. These demonstrations take a long time to plan and prepare, but we consider the effort well worth while. We have been encouraged by the favorable comments of our undergraduates and of visitors to the department. We have, so far, completed two demonstrations —one on cancer of the cervix, the other on discharge from the genital tract. It is our intention to build up a small series of demonstrations so that the most important gynecological subjects are covered.

The gynecological staff first agree upon a subject which they consider to be of sufficient importance to present in this way. The subject matter is discussed in detail with the artist who then prepares a series of miniature panels drawn to scale to be used as a basis of discussion between artist and clinician. Points for emphasis, as suggested by the text, are high-lighted by color, size of lettering, or form of illustration. The final display is presented on light boards 20×25 inches in size, protected by a covering of $\frac{1}{16}$ inch perspex. We show, in Figure 14, how the display is set out in the ward teaching room. Back lighting is provided for the panels with color transparencies.

These panel demonstrations are used for purposes of revision and are not meant as a substitute for clinical teaching in the wards and operating theaters.

DISCUSSION

During the clinical years of the medical curriculum great emphasis is placed upon teaching in the out-patient department, in the operating theater and at the patient's

bedside. In this part of the student's training there has been a tendency, we believe, to underestimate the value of visual teaching aids or even to consider them out of place. We have never regarded these aids as a substitute for clinical material, but rather we use them to elaborate and link up the various methods of clinical teaching. We have found that carefully selected and prepared aids, when used in conjunction with other methods of teaching, can add reality and interest for the student. In the course of his training the medical student is taught to observe before he examines the patient and has, therefore, a certain visual approach to his studies. His ability to assimilate facts and knowledge has long been stimulated by exposure to commercial advertising in newspapers, at the cinema, and on television. Possibly because of this background we find that our students welcome the assistance of visual aids in their teaching. There are advantages too for the teaching staff. In particular the development of panel teaching displays, such as we describe in this article, requires the medical staff to meet, discuss, and crystallize their views on a variety of subjects.

Our interest in visual teaching aids is a continuing one. Working together, our two departments have built up a library of experience which we feel will prove to be of use as we experiment with and develop other forms of visual teaching aids.

ACKNOWLEDGMENT

We are indebted to E. Leitz of London for the photograph of the table viewer.

REFERENCES

RUSSELL, J. K.; MUSTART, D.; and DUNCAN, C. J. Lancet, 2:383, 1956.

FIG. 1.—A weighted speculum has been used to give full exposure of the cervix which is placed centrally in the picture. This is the standard view we aim at in producing color transparencies of the cervix.

FIG. 2.—Cervical erosion and endocervicitis producing copious muco-pus.

FIG. 3.—Cervical erosion with three small mucous polypi at the external os.

FIG. 4.—Vascular cervical erosion producing large quantities of clear mucus.

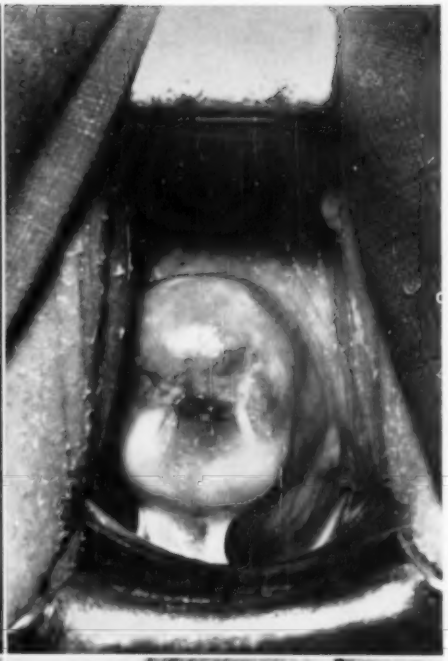

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FIG. 5.—A simple cervical erosion producing a clear mucoid discharge.

FIG. 6.—An early excavating cancer of the cervix. The endocervix has largely been replaced by friable tumor which bleeds easily and produces a blood-stained discharge.

FIG. 7.—Deficient perineum and small rectocele.

FIG. 8.—Recto-vaginal septum opened up.

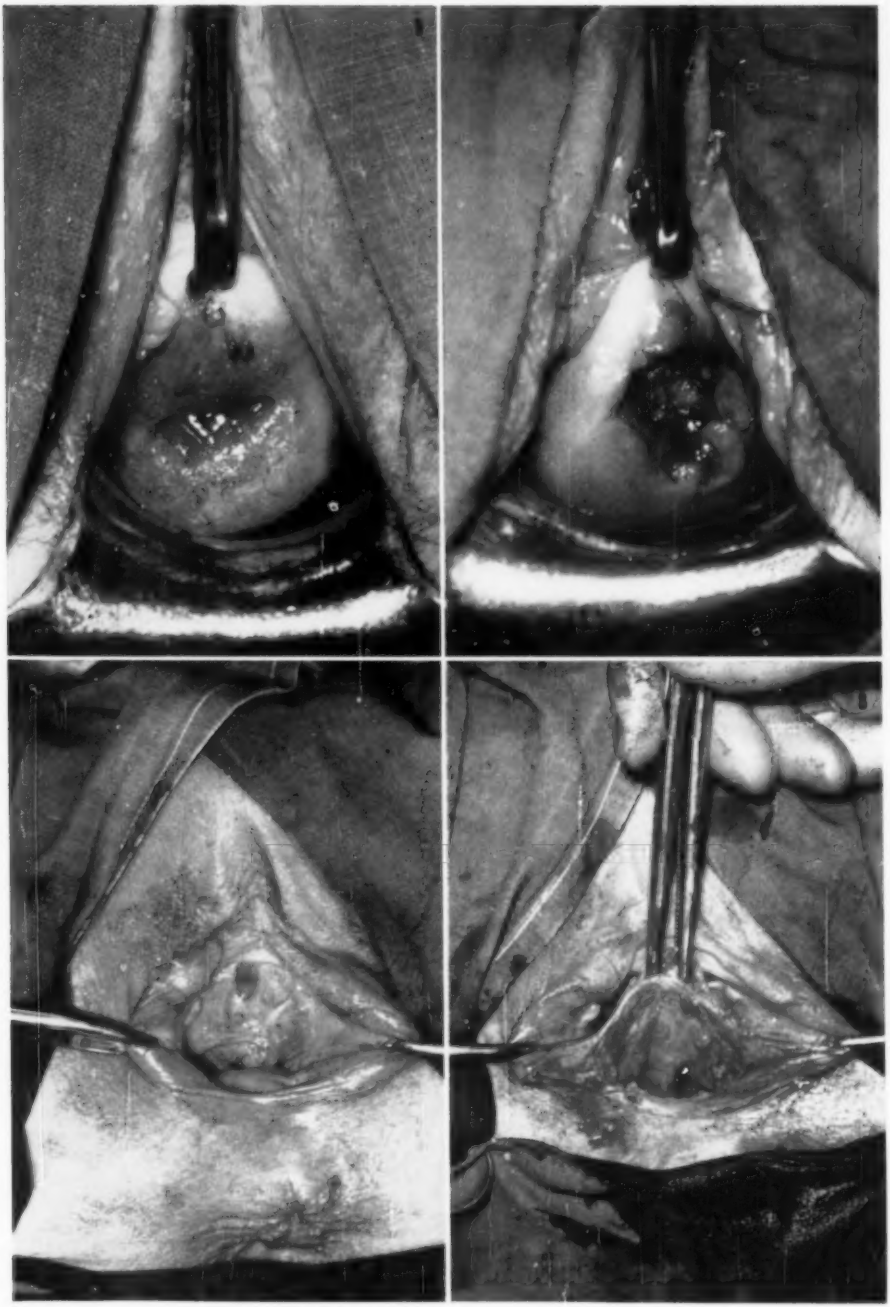

FIG. 9.—Suture through left levator anus muscle.

FIG. 10.—Suture through right levator anus muscle.

FIG. 11.—Levator ani muscles have been brought together. The superficial perineal muscles have still to be sutured through.

FIG. 12.—The completed operation. Note the length of the perineum and the thickness of the muscle layers between thumb and forefinger.

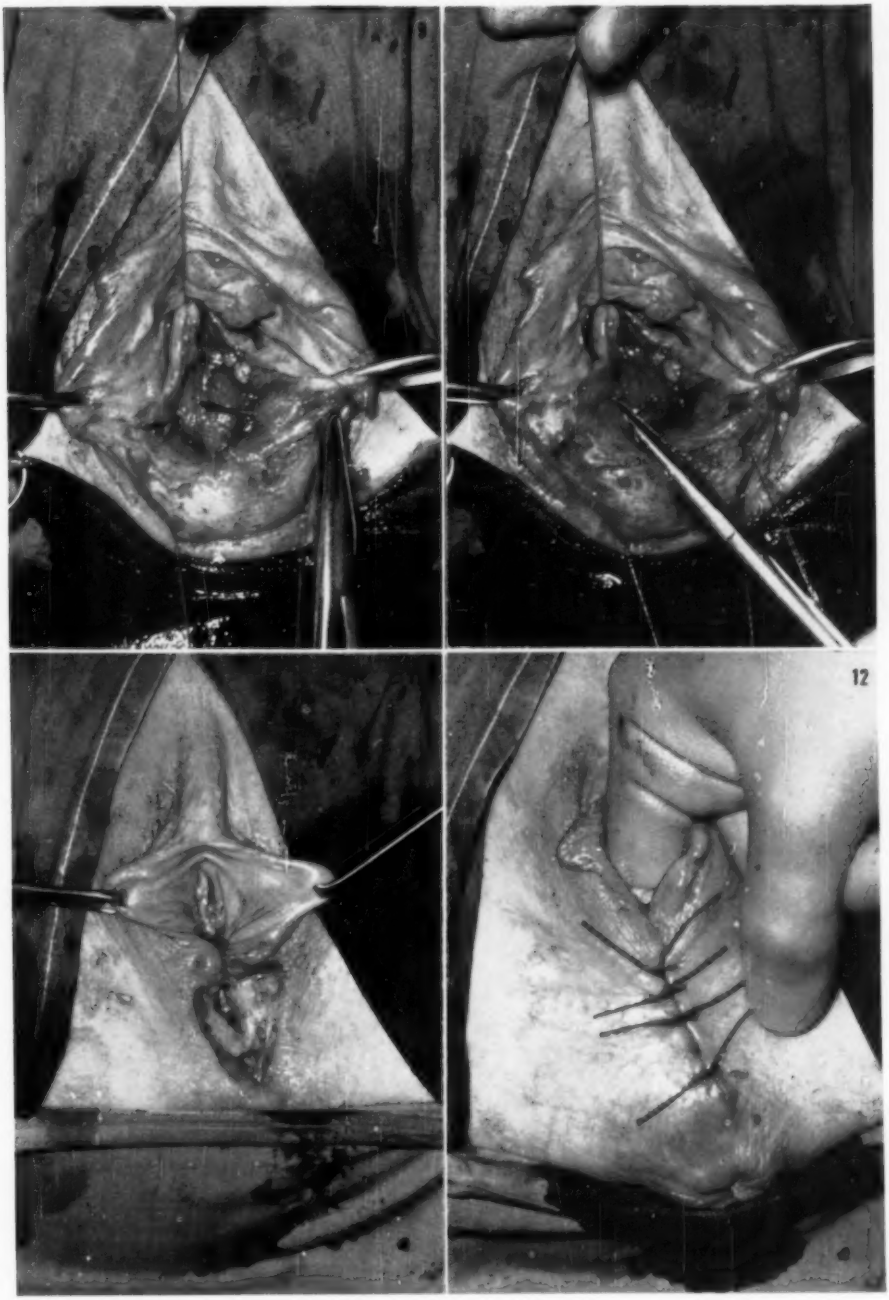
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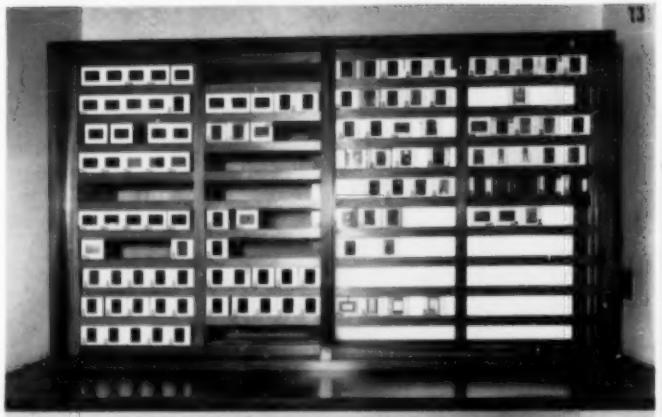
FIG. 13.—One of the sliding frames has been brought across in front of the illuminated panel.

FIG. 14.—A view of part of the ward teaching room to show how a panel demonstration is set up for students to examine at leisure.

FIG. 15.—Leitz "Prado" table viewer.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Post-examination Training Program in the Maharaja Sayajirao University of Baroda, India

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One of the important aims of medical education in India today is to develop in the medical graduates a propensity for the practice of integrated preventive and curative medicine, which, in addition to offering clinical service, will consider the total environment relative to the health of the people, provide preventive measures against ill health, and assume certain social responsibilities for maintaining health.

A vast part of India where 83 per cent of the people live is essentially rural, more lacking in medical and health facilities than the towns. These rural areas have a greater need for integrated curative and preventive service than do the towns. It is therefore fully justifiable that those who direct medical education should feel the necessity of equipping the medical graduates with experience in the rural areas, so that they can practice integrated medicine.

With these as the primary aims, the Maharaja Sayajirao University of Baroda (Bombay, India) has introduced compulsory post-examination training for all students who successfully complete the final M.B.B.S. examination, before the degree of M.B.B.S. is conferred on them. Earlier, the University introduced a premedical course for all students who intend to pursue the medical course. This course includes, among other subjects, biostatistics, elementary sociology, and biochemistry, in addition to biology, physics, and chemistry. This course runs for a year under the Faculty of Science of the University. Similarly, in the undergraduate medical course, the subject of Hygiene was developed into that of Preventive and Social Medicine, and a new department was opened in the Medical College.

At the completion of undergraduate studies, the post-examination training, at present, runs for a year and is divided as follows: (*a*) 3 months at a rural health unit; (*b*) 6 months at district hospitals; and (*c*) 3 months at the teaching hospital at Baroda.

Training at the rural health unit.—Like the Medical College, this unit is a part of the Health Department of Bombay State. The location is in the rural area 9 miles from Baroda City and is connected to it by road and rail services. The Unit serves 32 villages with a 65,000 population, to whom it renders both curative and preventive services. The Unit runs Primary Health Centres, each one being staffed by a doctor, two nurses, one of whom is a public health nurse, a sanitarian, and other staff members. The Unit itself is worked by an experienced Medical Officer of Health, with public health nurses and other sanitary staff. It works in complete coordination with the National Extension services meant for all-around development of the villages in this area.

The training program at the Health Unit is divided as follows:

Mornings: All graduates work in the Primary Health Centre clinic. Two selected cases are taken by each student, who does clinical and laboratory examinations. Inquiries about socio-economic, sanitary, nutritional, and family conditions are made. Treatment, with a demonstration of nursing procedures and preventive advice, are

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given. Follow-up is done. Visits to homes of the patients, whenever necessary, are made. These activities are carried out under the guidance of the Medical Officer of Health and his subordinate, e.g., the Primary Health Centre medical officer. In cases where further investigations are felt necessary, the patients are brought to the teaching hospital at Baroda.

Also, specialists from the teaching hospital visit the Unit on fixed dates, once a week or once a fortnight, and guide the students in the Unit on cases which the specialists select or which are selected by the students. Incidentally, not only do the students and the patients benefit by these visits, but also the teachers themselves, since the latter can have a first-hand idea of the types of diseases prevalent in rural areas, the difficulties of diagnosis and treatment, and then modify their teaching to the undergraduates to suit the needs of the students who are likely to practice in rural areas.

Afternoons (once a week): During the period of training at the Unit, visits are made to homes of three patients selected from the Primary Health Centre clinic. The graduates study the effect of environmental factors, e.g., nutritional, social, economic, family, etc., on health, convalescence, and recovery. They also note how rural patients react to their advice, the difficulties of nursing and home treatment, etc. The public health nurses assist the students, under guidance of the Medical Officer of Health, during these observations.

Afternoons (twice a week): Prenatal and child health clinics are held by the students, under the supervision of the specialists from the teaching hospital at Baroda. Here they actually practice the principles of holding these clinics, learn about positive health work, and also about such important factors as the range of norms among the people attending these clinics and the identification of subclinical conditions.

Afternoons (ten occasions): Under the guidance of the Medical Officer of Health, the graduates observe rural sanitary conditions, the type of sanitary constructions suitable for villages, the difficulties that confront them, and the efforts that are being made to improve the unsanitary conditions. Similarly, disinfection and disinfestation, collection of vital statistics, mass immunization, and health propaganda are also done by the graduates. It is now accepted all over the country that the work for village improvement must be done by the village communities on their own initiative, aided, of course, by the State. The basic village organization in India is the village panchayet (a committee of five). It is this organization that is vested with health work in a village. The students must therefore be greatly interested in the working of the village panchayets, and they are given opportunities to study their work and also discuss or offer programs for health work to them.

Afternoons (two occasions): The students acquaint themselves with the health work of a municipality, National Extension Services, voluntary organizations, and the State Health Department.

Afternoons (eight occasions): Students work in School Health Clinic with the help of the school teachers, public health nurses, and the Medical Officer of Health.

It has also been possible to interest the students in a small survey project—which was carried out by them.

During this period, continuous insistence is made on active learning by students through self-discovery undertaken on students' own initiative.

Although the direct responsibility for the training in the Health Unit has to be borne by the Medical Officer of Health, the Department of Preventive and Social Medicine of Medical College, Baroda, is responsible for drawing up the curriculum, carrying out supervision, and evaluating it from time to time.

Training at the district hospital.—During this second part of the postgraduate training, the students are posted in groups of three or four at different civil hospitals in the surrounding districts. These hospitals are under the control of senior members of

the medical service of the Bombay state or private medical practitioners—all with postgraduate qualifications. Under the guidance of these medical officers the students begin to practice medicine in those hospitals where modern facilities for diagnosis and treatment are not well developed. It is hoped that, by this training, the students will learn how to face and overcome difficult situations in rural and small town practice.

Training at the teaching hospital at Baroda for 3 months.—During this period the students work in different departments of the teaching hospital, and the accent is on a higher type of training in accurate diagnosis and up-to-date treatment.

It can be seen that the whole period of 1 year between passing the final M.B.B.S. examination and the conferring of the degree of M.B.B.S. by the University is spent in further equipping the students with the experience of actual medical practice and, in concurrence with the need of the country, of practice of integrated curative and preventive medicine, especially in rural areas.

Evaluation of this program, which was only put into effect in 1957, is necessary. The Faculty of Medicine are enthusiastic about it. It is hoped that an evaluation of it from time to time will help in developing a program of training that will meet the needs of the country.

The Seventh Annual Report of the National Intern Matching Program

WARD DARLEY, M.D.*

Prior to the turn of this century American medical education took very little interest in patient contact and responsibility as a part of the preparation for the practice of medicine. This lack of interest was reflected in the development of the internship as a responsibility of the hospital, rather than of the medical school, and now, more than half a century later, even though participation in and responsibility for patient care are very much a part of the medical student's education, and although nearly half of this country's internships are in medical school-affiliated hospitals, the internship continues primarily as a hospital responsibility—but a responsibility with which medical schools, and medical students as well as hospitals, are concerned. It should be of interest to review the development of this three-way concern.

The American Medical Association gave official recognition to the internship in 1904. The first list of hospitals approved for internship training was published in 1914. It was not until 1920 that the number of available internships began to exceed the number of medical graduates available (1). Since 1920, and with each succeeding year, this disparity has increased until now the annual number of internships available is nearly twice the number of U.S. medical graduates. As the result of this, the development of competition between hospitals and the resultant pressures upon medical students to accept internships was inevitable. As these pressures grew, it was equally inevitable that the medical schools should take an increasing interest in assisting their graduates to obtain good internships.

The first definite effort to solve this problem was in 1945 when the Association of American Medical Colleges, the American Hospital Association, the American Protestant Hospital Association, the American Catholic Hospital Association, and the American Medical Association adopted what was known as the Cooperative Plan. This plan involved the voluntary participation of medical students, medical schools, and hospitals in a complicated set of arrangements that were supposed to operate without any centralized operating authority. While the result was an improvement over the pre-1945 situation, there still remained confusion with many instances of lack of understanding and cooperation. As the number of internships continued to move ahead of the number of available U.S. graduates, it became apparent that something more was needed.

This "something" was suggested in 1950 by Dr. F. J. Mullin (4) in the form of a nationwide plan in which the matching of student and hospital choices could take place free of pressures and premature commitments, together with a time schedule and a system of appointment and acceptance notification which would be reasonable and capable of central administration. This plan was tried in 1951 and was found to be sufficiently successful so that its basic principles have been adopted as standard practice. Great credit is due the hospitals and the medical students for their willingness to cast their lot with this enterprise.

The agency now responsible for the administration of the plan is known as the Na-

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tional Intern Matching Program—NIMP. NIMP is an independent corporation, governed by a Board of Directors, which has representation from the American Hospital Association, American Medical Association, American Protestant Hospital Association, Association of American Medical Colleges, Catholic Hospital Association, Student American Medical Association, and one medical student representing the medical student body at large. The Army, Navy, Air Force, Veterans Administration, and Public Health Service have liaison membership upon the Board.

The mechanism of the plan, although complicated in execution, is simple in theory. Basically, NIMP acts as a clearing agency. Each participating student submits a confidential list to NIMP, ranking, in the order of his preference, the hospitals where he has applied for internship. He applies for any internship which interests him. Each participating hospital also submits a confidential list, ranking in the order of its preferences, the students which have applied to it. NIMP then matches the student with the internship he rates the highest, insofar as the hospital's relative evaluation of the student applicant makes this possible.

While previous reports of NIMP (5–7) have given detailed descriptions of the mechanisms of matching, none is as easily understood as the one prepared by Dr. N. C. Webb, Jr., when he was a student member of the NIMP Board of Directors and was himself being matched to an internship (9). The significant portion of Dr. Webb's description is reproduced herewith.

STUDENT CONFIDENTIAL PREFERENCE LISTS

Green	*Smith*	*Jones*
1. Mt. Sinai	1. Mt. Sinai	1. Internia
2. Internia	2. Internia	2. St. Joseph
		3. Mt. Sinai

HOSPITAL PREFERENCE LISTS

The number in parentheses shows the number of interns being sought by each hospital.

Mt. Sinai (2)	*Internia* (1)	*St. Joseph* (1)
1. Jones	1. Smith	1. Jones
2. Smith	2. Jones	
3. Green	3. Green	

Consider Green, whose first choice is Mt. Sinai, which offers two internships, and which has ranked him third. Unless either Jones or Smith gets matched elsewhere, he cannot get in. He is also waiting at Internia, since it, offering but one internship, has shown preference for Smith and Jones, and, unless both Smith and Jones get matched elsewhere, Green is not in here yet either.

Consider Smith. He ranked Mt. Sinai first, and it ranked him second. Since Mt. Sinai offers two internships, Smith can be permanently "matched." Since Smith is now matched at his first-choice hospital, his name is removed from Internia, his second choice, and Jones and Green slide up.

Now the situation looks like this (*indicates a permanent match):

STUDENT LISTS

Green	*Smith*	*Jones*
1. Mt. Sinai	*1. Mt. Sinai	1. Internia
2. Internia	2. ~~Internia~~	2. St. Joseph
		3. Mt. Sinai

HOSPITAL LISTS

Mt. Sinai (2)	*Internia* (1)	*St. Joseph* (1)
1. Jones	1. ~~Smith~~	1. Jones
*2. Smith	2. Jones	
3. Green	3. Green	

Consider Jones. Since the removal of Smith from Internia's list, Jones has moved up to top position. This is a permanent match, since it is Jones's first choice. Jones's name is removed from the Mt. Sinai list and from the St. Joseph list, since he is matched at a hospital he prefers to either of these.

Now the situation looks like this (**denotes filled hospital):

STUDENT LISTS

Green	*Smith*	*Jones*
1. Mt. Sinai	*1. Mt. Sinai	*1. Internia
2. Internia	2. ~~Internia~~	2. St. Joseph
		3. Mt. Sinai

HOSPITAL LISTS

Mt. Sinai (2)	**Internia* (1)	*St. Joseph* (1)
1. ~~Jones~~	1. ~~Smith~~	1. ~~Jones~~
*2. Smith	*2. Jones	
3. Green	3. Green	

The removal of Jones's name from Mt. Sinai allows Green to slide up into second place. Since two internships are offered at Mt. Sinai, Green is a permanent match. Final results:

Mt. Sinai—Smith and Green
Internia—Jones
St. Joseph—none

The three students all were matched with their first-choice hospital. In this example, we have seen how men "slide up" on hospital lists, as men above them are matched to hospitals more desired by those men. You will note that each man holds his positions on the lists of the various hospitals until he becomes a permanent match. No one can "by-pass" a student on a hospital list. A student is removed from a hospital list only when he is matched with a hospital he prefers more. St. Joseph got no intern because its one applicant preferred Internia and was matched there.

This, the 1958 Matching Program's report, is the seventh consecutive year in which student and hospital choices have been matched without error. The success of each matching depends upon the distribution of carefully prepared materials to medical students, medical schools, and hospitals, the meeting of deadlines on the part of students, hospital administrators, medical school deans, and the NIMP office, and the careful checking and re-checking of both student and hospital choices, both with the students and hospitals and within the mechanical system of the matching itself.

The steps essential to one complete program are as follows:

1. The hospitals and students make arrangements to participate in a given program during the winter and spring before the following cycle begins. The dates indicated are approximate, since they vary slightly from year to year.

2. October: The hospital directory is published, containing a description of each participating hospital, the types of internships offered, and the intern quota for each.

At the same time the student directory is published which contains the name and medical school of each participating student.

3. October 1—January 10: This is the period during which the students make application for internship to hospitals. The process of application, more often than not, involves personal visits to the hospitals in which the students are interested.

4. October 1–December 10: The deans send letters of recommendation to the hospitals so that insofar as possible the hospitals may have this information when the students are interviewed or are being considered for internship.

5. January 31: Closing date for receipt at NIMP office of student and hospital confidential rank order lists.

6. February 16: The confidential student list is confirmed to each student. Also, the confidential hospital list is confirmed to each hospital.

7. February 21: Closing date for accepting corrections to student or hospital confidential rank order lists.

8. February 23: The matching operation begins.

9. March 11: The results of the matching plan are mailed to medical school deans and to hospitals.

10. March 16: The results are given to the students by the deans. At the same time the hospitals receive their matching results.

11. March 16–26: The hospitals send contracts to matched students and students sign and return the contracts.

Except for Tables 5 through 19, the tables and discussions that follow will continue the record about as it has been carried in previous reports (2, 3, 5–8). The general statistics as shown in Table 1 reveal no striking shifts over previous years. The number of unmatched students continues to be large because of the difficulty which foreign graduates have in competing with U.S. and Canadian students (152 out of all the 397 unmatched students were graduates of foreign schools) for the more popular internships. In the program of 1959–60 (the coming program), because screening by the Educational Council for Foreign Medical

Graduates will be required for the registration of graduates from foreign schools, the number of foreign graduates participating in the program and, *a priori*, the number going unmatched, will be sharply reduced. After 1959 the number of participating foreign graduates should begin to go up, but also, because of the ECFMG screening, the percentage matched should be increased.

Table 2 reveals the trend for each student to apply to an increasing number of hospitals. Table 3 shows a slight continuation of the downward trend in students receiving their first choices. These two trends can be taken to indicate that students are adding, as first choice, institutions in which they may feel their chances of acceptance are open to question, but also in which they would like to intern if they possibly can. A student can justify such "tries" because in doing so, he knows that he is not hurting his chances for his second- or third-choice hospitals—hospitals which formerly he would have listed in first and second place.

TABLE 1

GENERAL RESULTS, 1952–58

Year	Hospitals participating	Intern programs offered	Total positions offered	Total positions filled	Per cent filled	Number unfilled positions	Students participating	Students unmatched
1952	795	1068	10414	5564	53	4850	5681	117
1953	808	1102	10971	5744	52	5227	6033	289
1954	820	1032	10729	6051	56	4678	6412	361
1955	814	1056	11075	6379	58	4696	6713	334
1956	821	1063	11459	6588	57	4871	6821	233
1957	822	1052	11804	6539	55	5265	6923	384
1958	819	1062	11958	6734	52	5224	7031	397

TABLE 2

APPLICATION PER STUDENT

Year	No. students	No. applications	No. per student
1952	5681	21728	3.8
1953	6033	19416	3.2
1954	6412	21579	3.4
1955	6713	25617	3.8
1956	6821	29474	4.3
1957	6923	30434	4.4
1958	7031	32090	4.6

TABLE 3

PERCENTAGE OF STUDENTS MATCHED BY ORDER OF CHOICE

Year	Per cent first choice	Per cent second choice	Per cent third choice	Per cent fourth choice or lower
1952	84	10	3	3
1953	85	10	3	2
1954	82	11	4	3
1955	76	14	5	5
1956	74	15	6	5
1957	76	13	6	5
1958	74	14	6	6

Table 4 shows a slight drop in the percentage of hospitals receiving their highest choices of students. There is no logical explanation for this. The significant thing here is that the percentage of hospitals receiving the total of their first and second choices has remained essentially the same.

Tables 5 through 8 show hospitals classi-

TABLE 4

HOSPITALS RANKING OF STUDENTS WITH WHOM THEY WERE MATCHED

Year	Per cent matched from Rank Group I*	Per cent matched from Rank Group II	Per cent matched from Rank Group III	Per cent other	Total
1956	61	24	11	4	100
1957	71	19	7	3	100
1958	67	22	8	3	100

* If hospital quota is 10, first ten men on list form Rank Group I, numbers 11–20 Rank Group II, etc.

fied according to medical school affiliation or non-affiliation, the number of interns sought and obtained, and the percentage of internships filled. The affiliated hospitals are broken down according to whether or not the degree of medical school control is of major or minor degree. The figures for the 5-year period of 1953 through 1958 show some very interesting trends:

Table 5, major affiliated hospitals: The total number of hospitals has remained essentially unchanged. The total number of interns sought and the actual percentage matched have increased. The number of hospitals filling 50 per cent or more of their quotas has increased, and that of those filling 49 per cent or less has decreased.

Table 6, minor affiliated hospitals: The total number of hospitals has decreased, as has also the number of interns sought. The percentage of the total of interns matched over the number sought has shown an increase. The number of hospitals filling 50 per cent or more of their quotas has remained essentially unchanged, and that of those filling 49 per cent or less has decreased.

Table 7, non-affiliated hospitals: There have been no striking changes in any of these figures over the 5-year span.

Table 8, federal hospitals: Veterans Administration hospitals are not included here, because students apply to the individual institutions rather than to this particular governmental service. As a consequence,

TABLE 5

MAJOR TEACHING HOSPITALS

Quota saturation percentage	1953 No. hospitals	1953 Interns Sought	1953 Interns Matched	1953 Per cent matched	1958 No. hospitals	1958 Interns Sought	1958 Interns Matched	1958 Per cent matched
100	39	897	897	100	45	1224	1224	100
99–50	58	1962	1457	74.3	78	2528	1976	78.2
49–01	40	930	289	31.1	22	526	182	34.6
0	12	87	0	0	6	47	0	0
TOTAL	149	3876	2643	68.2	151	4325	3382	78.2

TABLE 6

MINOR TEACHING HOSPITALS

Quota saturation percentage	1953 No. hospitals	1953 Interns Sought	1953 Interns Matched	1953 Per cent matched	1958 No. hospitals	1958 Interns Sought	1958 Interns Matched	1958 Per cent matched
100	11	177	177	100	11	145	145	100
99–50	20	271	190	70.1	25	364	265	72.8
49–01	28	403	106	26.3	13	175	38	21.7
0	20	205	0	0	8	62	0	0
TOTAL	79	1056	473	44.8	57	746	448	60.1

TABLE 7

NON-AFFILIATED HOSPITALS

Quota saturation percentage	1953 No. hospitals	1953 Interns Sought	1953 Interns Matched	1953 Per cent matched	1958 No. hospitals	1958 Interns Sought	1958 Interns Matched	1958 Per cent matched
100	62	1120	1120	100	65	841	841	100
99–50	128	1475	1030	69.8	127	1607	1109	69.0
49–01	178	2085	478	22.9	151	1797	428	23.8
0	212	1359	0	0	264	2116	0	0
TOTAL	580	6039	2628	43.5	607	6361	2378	37.4

the Veterans Administration hospitals are distributed among the previous three groupings. The only notable change in the governmental services is that the percentage of interns matched over the number sought has gone from 72.6 to 100.

Tables 9 through 12 show hospitals classified according to monthly stipends offered, the number of interns sought and obtained, and the percentage of internships filled. Here again the figures for 1953 and 1958 show significant trends.

TABLE 8

FEDERAL SERVICES (VETERANS ADMINISTRATION EXCLUDED)

Quota saturation percentage	1953				1958			
	No. hospitals	Interns		Per cent matched	No. hospitals	Interns		Per cent matched
		Sought	Matched			Sought	Matched	
100	5	497	497	100	4	526	526	100
99–50	1	40	20	50				
49–01	10	198	53	26.8				
0	3	50	0	0				
TOTAL	19	785	570	72.6	4	526	526	100

TABLE 9

HOSPITALS OFFERING STIPENDS FROM 0 TO 50 DOLLARS

Quota saturation percentage	1953				1958			
	No. hospitals	Interns		Per cent matched	No. hospitals	Interns		Per cent matched
		Sought	Matched			Sought	Matched	
100	27	475	475	100	14	394	394	100
99–50	65	1795	1350	75.2	17	548	440	80.3
49–01	41	934	276	29.6	6	140	56	40
0	27	210	0	0	5	43	0	0
TOTAL	160	3414	2101	61.5	42	1125	890	79.1

TABLE 10

HOSPITALS OFFERING STIPENDS OF FROM 51 TO 100 DOLLARS

Quota saturation percentage	1953				1958			
	No. hospitals	Interns		Per cent matched	No. hospitals	Interns		Per cent matched
		Sought	Matched			Sought	Matched	
100	40	736	736	100	26	637	637	100
99–50	59	940	647	68.8	42	1178	867	73.6
49–01	107	1357	289	21.3	26	417	100	24
0	118	802	0	0	59	577	0	0
TOTAL	324	3835	1672	43.6	153	2809	1604	57.1

TABLE 11

HOSPITALS OFFERING STIPENDS OF FROM 101 TO 200 DOLLARS

Quota saturation percentage	1953				1958			
	No. hospitals	Interns		Per cent matched	No. hospitals	Interns		Per cent matched
		Sought	Matched			Sought	Matched	
100	36	424	424	100	53	857	857	100
99–50	74	871	614	70.5	107	1907	1427	74.8
49–01	83	873	237	27.1	108	1410	350	24.8
0	88	557	0	0	173	1310	0	0
TOTAL	281	2725	1275	46.8	441	5484	2634	48.0

Table 9, hospitals offering less than 50 dollars per month: The number of hospitals, for all levels of quota saturation, has dropped precipitously. The number of interns sought and matched has also dropped throughout. On the other hand, the percentage of total interns matched over the number sought has increased.

Table 10, hospitals offering between 51 to 100 dollars per month: Here again the total number of hospitals for all levels of quota saturation has shown a sharp drop. Except for the quota saturation of from 99 to 50 per cent, the number of interns sought at all levels has also dropped. But the total number of interns matched has remained essentially the same, and the percentage of total interns matched over the number sought has increased.

Table 11, hospitals offering between 101 to 200 dollars per month: The number of hospitals at each saturation level has increased significantly. At all saturation levels the percentage of interns matched over the number sought has remained essentially unchanged.

Table 12, hospitals offering more than 201 dollars per month: The number of hospitals and the number of interns sought and matched all show a very marked increase. Yet the percentage of internships filled over the number offered remains about the same.

Tables 13 through 16 show hospitals classified according to quota size, the number of interns sought and obtained, and the percentage of internships filled. It should be noted that the data cover a 4- instead of a 5-year span (begins with 1954 instead of 1953).

Table 13, hospitals with from one to nine interns: There has been a drop in the number of hospitals as well as in the number of interns sought at all quota saturation levels, but at each level the percentage of the number of interns sought against the number matched remains essentially the same.

Table 14, hospitals with from ten to nineteen interns: The number of hospitals receiving 100 per cent of their quotas has dropped. For each of the levels below 100 per cent, both the number of hospitals involved and the number of interns sought has increased, and yet the percentage of the number of interns sought against the number matched has remained essentially the same.

Table 15, hospitals of from twenty to 49 interns: The number of hospitals receiving 50 per cent or more of their interns has increased, and that of those receiving 49 per cent or less has decreased; but at all saturation levels the percentage of the number of interns sought against the number matched has remained essentially the same.

Table 16, hospitals with 50 or more interns: The number of hospitals involved here continues to be small, and none of the data for the 4-year span shows any significant change.

Thus, from the preceding three groups of data, it would appear:

1. That the quota saturation percentage for the affiliated hospitals has been increasing and is more favorable than that for the unaffiliated.

2. That the federal services (Veterans Administration excluded) is enjoying 100 per cent quota saturation.

3. That, while more hospitals are offering higher stipends, the increasing high quota saturation for the low as compared with the high stipend hospitals shows that increasing numbers of graduates are attracted to an internship by factors other than stipend.

4. That those hospitals with intern quotas of twenty or more are experiencing a much higher quota saturation than those with less.

Finally, Table 17 shows the distribution of the students matched as between those hospitals affiliated with their own school of graduation, hospitals not affiliated with their school of graduation but in the same state, hospitals not in the state of graduation, and the federal services (exclusive of the Veterans Administration). The informa-

TABLE 12

Hospitals Offering Stipends of 201 or More Dollars

Quota saturation percentage	1953 No. hospitals	1953 Interns Sought	1953 Interns Matched	1953 Per cent matched	1958 No. hospitals	1958 Interns Sought	1958 Interns Matched	1958 Per cent matched
100	4	62	62	100	26	302	302	100
99–50	5	39	27	69.2	62	828	593	71.6
49–01	5	56	18	32.1	43	504	136	27
0	7	28	0	0	34	254	0	0
Total	21	185	107	57.8	165	1888	1031	54.6

TABLE 13

Number of Interns Sought, 1–9

Quota saturation percentage	1954 No. hospitals	1954 Interns Sought	1954 Interns Matched	1954 Per cent matched	1958 No. hospitals	1958 Interns Sought	1958 Interns Matched	1958 Per cent matched
100	42	261	261	100	29	185	185	100
99–50	58	385	258	67	56	370	246	66.5
49–01	74	487	112	23	64	445	101	22.7
0	238	1322	0	0	193	1159	0	0
Total	412	2455	631	25.7	342	2159	532	24.6

TABLE 14

Number of Interns Sought, 10–19

Quota saturation percentage	1954 No. hospitals	1954 Interns Sought	1954 Interns Matched	1954 Per cent matched	1958 No. hospitals	1958 Interns Sought	1958 Interns Matched	1958 Per cent matched
100	69	926	926	100	56	795	795	100
99–50	86	1111	788	70.9	107	1453	1031	70.9
49–01	88	1126	259	23	102	1358	347	25.6
0	44	529	0	0	82	975	0	0
Total	287	3692	1973	53.4	347	4581	2173	47.4

TABLE 15

Number of Interns Sought, 20–49

Quota saturation percentage	1954 No. hospitals	1954 Interns Sought	1954 Interns Matched	1954 Per cent matched	1958 No. hospitals	1958 Interns Sought	1958 Interns Matched	1958 Per cent matched
100	29	838	838	100	33	1009	1009	100
99–50	43	1287	1004	78	55	1648	1292	78.4
49–01	30	880	275	31.3	17	528	142	26.9
0	2	40	0	0	3	91	0	0
Total	104	3045	2117	69.5	108	3276	2443	74.6

TABLE 16

Number of Interns Sought, 50 and Up

Quota saturation percentage	1954 No. hospitals	1954 Interns Sought	1954 Interns Matched	1954 Per cent matched	1958 No. hospitals	1958 Interns Sought	1958 Interns Matched	1958 Per cent matched
100	6	631	631	100	3	221	221	100
99–50	10	839	668	79.6	12	1028	781	76
49–01	1	67	31	46.3	3	167	58	34.7
0	0	0	0	0	0	0	0	0
Total	17	1537	1330	86.5	18	1416	1060	74.9

tion really being sought here is the extent to which graduates tend to leave their own school's hospitals and communities for internship. Inspection of the table will reveal that, if the federal services are ignored, approximately one half of the graduates intern outside of the state in which their school of graduation is located, one fourth intern in the hospitals affiliated with their school of graduation, and the other fourth leave the hospitals of their school of graduation but still remain in the state.

Tables 18 and 19 show the breakdown of the above data as between graduates of publicly and privately owned schools. No striking difference between the two groups can be noted.

From the vantage point of 7 years' perspective, it is indeed gratifying to witness the success of a complicated socio-economic experiment of this type. It is one that justifies itself not only in the name of important service but also in the name of research data that is leading to a better understanding of a very important aspect of medical education and service.

TABLE 17

1958 DISTRIBUTION DATA: NUMBERS AND PERCENTAGES MATCHED: *All* SCHOOLS OF MEDICINE

TOTAL U.S. GRADUATES MATCHED FROM ALL MEDICAL SCHOOLS	HOSPITALS AFFILIATED WITH SCHOOL OF GRADUATION		HOSPITALS NOT AFFILIATED WITH SCHOOL OF GRADUATION BUT IN SAME STATE		HOSPITALS OUT-OF-STATE		FEDERAL SERVICE	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
6347	1545	24.3	1399	22.0	2885	45.4	518	8.16

TABLE 18

1958 DISTRIBUTION DATA: NUMBERS AND PERCENTAGES MATCHED: GRADUATES OF *Privately* OWNED SCHOOLS OF MEDICINE

TOTAL U.S. GRADUATES MATCHED FROM PRIVATELY OWNED MEDICAL SCHOOLS	AFFILIATED HOSPITALS OF OWN MEDICAL SCHOOLS		HOSPITALS IN SAME STATE BUT NOT AFFILIATED WITH OWN MEDICAL SCHOOL		OUT-OF-STATE HOSPITALS		FEDERAL SERVICE	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
3451	925	26.8	651	18.9	1641	47.6	234	6.8

TABLE 19

1958 DISTRIBUTION DATA: NUMBERS AND PERCENTAGES MATCHED: GRADUATES OF *Publicly* OWNED SCHOOLS OF MEDICINE

TOTAL U.S. GRADUATES MATCHED FROM PUBLICLY OWNED MEDICAL SCHOOLS	AFFILIATED HOSPITALS OF OWN MEDICAL SCHOOL		HOSPITALS IN SAME STATE BUT NOT AFFILIATED WITH OWN MEDICAL SCHOOL		OUT-OF-STATE HOSPITALS		FEDERAL SERVICE	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
2896	620	21.4	748	25.8	1244	43.0	284	9.8

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MEDICAL EDUCATION FORUM

Editorial

IN THE CITY OF BROTHERLY LOVE

Unfortunately, there is no one alive today who can compare the 1st Annual Meeting with the 69th Annual Meeting of the A.A.M.C. It would be interesting to hear such an individual describe the tremendous progress which has occurred since the first session of our Association. However, at Philadelphia opinions were frequently expressed concerning the growth and diversification of the Association, even during recent years. It seemed that the time had come when we felt the necessity of taking stock. The annual meeting has expanded from an intimate conference of medical school deans to a convention of medical educators. We have moved from the personal touch to a national or even international touch.

"Are we too big?" We think not, but we are undoubtedly suffering a few growing pains. The size of the registration for the annual meeting amply demonstrated the complex character of medical education today. One has only to look at the program of the recent meeting to appreciate the different groups and attitudes involved in medical education—1958 style.

First, and properly so, there were the teachers who were represented by the speakers from the Teaching Institute. We enjoyed their reports, but we were impressed again with the difficulty which George Berry faces in trying to carry the spirit of the Institutes to the annual meeting.

Second, the role of the University was represented by the panel of University Presidents. It was interesting and a bit disquieting to hear their voices raised in concern about some of the activities of medical schools. No one would question the great force that our University affiliations represent in the advance of medical education or the need to ever strengthen our relations. Joseph Hinsey probably made the correct diagnosis when he pointed out that our success is the very reason why we are subject to some of the criticism from other elements of the University and from the Presidents. Whether we liked the criticisms or not, it was unquestionably healthy to have them expressed. We need a relationship similar to that of the graduate school Deans in the Association of American Universities, but with broader representation. President J. L. Morrill's theme of "unity in diversity" struck the proper note.

Third, the important role of organized medicine was set forth by the President of the A.M.A. We hope that the sound working relationships that have developed between the A.M.A. and the A.A.M.C at the national level can be carried to localities where recurring conflagrations between medical societies and medical schools continue to plague us.

Fourth, the administrators of the teaching hospitals had a part in the program. We believe that it is a good idea to have this group, which is an integral part of the operation of medical education, formally introduced into the activities of the A.A.M.C.

The 69th Annual Meeting represented an important milestone in the development of the A.A.M.C. Retiring President Lowell Coggeshall climaxed an eminent year of stewardship by arranging a program which acknowledged the excellence of the past and presented a challenge for the future.

JOHN Z. BOWERS, M.D.

Communications

CURRENT MEDICAL EDUCATION IN JAPAN

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A new pattern for Japanese medical education is evolving. Educational policies in the health professions in Japan are changing. Orientation is swinging from Germany to the United States. The educational programs of Japanese health professions are shifting from the rigid conventional outlooks and curricula characteristic of early 20th century German medicine to the more fluid and coordinated interests of current American medical efforts. This change involves American medical leaders in responsibilities beyond those concerned with the United States alone. Japanese medical practice will tend more and more to imitate that which develops in the United States, with all its professed idealism, keen practicality, and latent unionism. Nevertheless, there are certain aspects of Japanese medicine which may remain unique, since they are rooted in the personality traits of the Japanese people.

Recently, Dr. Frank Berger of the Wallace Laboratories and I went to Japan to survey drug control there. The trip gave us an opportunity to visit many of the leading educational institutions concerned with the health professions and also to see something of the major drug manufacturing companies, as well as government laboratories and health control centers. Warm thanks are extended to our many Japanese colleagues who so generously and patiently gave pertinent information on current health conditions in Japan. Clearly, not more than general impressions can be made without long study and investigation. Nevertheless, the impressions which we received may aid in understanding and thus in helping to promote a greater degree of intellectual exchange in health affairs between the Japanese and ourselves, with resulting mutual benefit.

The character of the Japanese people.—Currently a traveler in Japan gets the impression that, in the face of severe economic anxiety, the Japanese people are cheerfully industrious. They are clean and healthy. They are proud and determined to get along. The psychological factors discussed so well by Dr. Ruth Benedict in her *The Chrysanthemum and the Sword* apparently still operate. The Japanese people seem to be self-reliant, and in their inherent dignity they seem to realize their individual responsibilities. In the face of increasing modern efficiency and ugliness, they retain a respect for the ancient beauties. There is a general high level of intelligence and intellectual interest.

In health affairs the Japanese people seem to be remarkably sophisticated. This may be part of the general elementary and high school training. There is over-all good general public health and sanitary control. The individual Japanese people themselves seem to understand the basic principles of personal hygiene and sanitation.

The health sophistication of the Japanese is well reflected in connection with their extensive self-medication. With close cooperation between drug manufacturing companies, university pharmacologists, and government officials, there is excellent over-all drug control,

with little evidence of abuse. There is, for example, surprisingly little drug addiction and practically no alcoholism, although the consumption of alcoholic beverages is increasing.

All types of drugs, except those which are agreed upon as "poisonous," are freely available for self-medication in the drug stores. These drug stores are well equipped with intelligent clerks, and the drugs are neatly packaged and labeled. The packages contain informative material on the chemistry, pharmacology, and clinical use of the drugs. These drug stores exist in the small villages as well as in the large cities. Even drugs for parenteral use are freely available to the people for self-medication, and some of them apparently maintain immunity by self-inoculation and self-vaccination. They seem to understand the principles of aseptic technique.

The Japanese people consult physicians in emergencies and in crises. There seems to be a program for systematic physical examination in the schools, but whether this extends to adults is not clear. There seems to be heavy attendance at the various clinics, but hospitalization is reserved for those who are critically sick or for those in emergency situations.

While the clinics and hospitals are not pretentious in any physical sense, they seem to be adequate for the purposes for which they are built. Equipment is poor, and facilities generally are meager, but there appears to be a thoroughly adequate personnel, and the sick seem to be well cared for. There is, however, evidence of heavy emphasis on the prevention of disease and on the promotion of health.

There appears to be much literature relating to health matters available to the general public. Rather sophisticated reports on scientific and clinical matters relating to health appear in magazines and newspapers, and the people (generally, in the larger cities, at least) seem to be well conversant with current advances in the health fields. There is close cooperation between the health professions, with respect to medicine, dentistry, pharmacy, nursing, veterinary medicine, and public health.

The character of medical education.—There are 50 medical schools. The better ones are associated with the national universities and usually have the buildings near those for the related health professions. Characteristic are such relatively well organized nationally supported medical schools as those at the Universities of Tokyo, Osaka, Kyoto, Fukuoka, Tokuku, Nogai, and Hokkaido. There are a number of private medical schools, such as the Medical and Dental College in Tokyo and the Women's Medical College in Tokyo. Several of the medical schools are supported by districts or municipalities. One of the outstanding private medical schools is Keio University Medical School in Tokyo.

The medical schools usually admit about 80 students to the first year class, following 3 years in college. Many of those who are admitted seem already to have a collegiate degree. About one applicant in 30 seems to be accepted. Entrance examinations are given for each school, as well as personal interviews. It is not known how many applicants apply to more than one school.

There is an over-all 5 per cent attrition in the 5 years of the medical curriculum which includes an internship. The M.D. degree is granted after completion of the internship. Federal regulations are involved in internships, and the Minister of Welfare determines the number of interns assigned to various hospitals. Both the students and interns appear to be well supervised.

There is a national examination for a license to practice medicine, which permits practice anywhere in Japan. Midwives are taught in medical schools by the medical faculty, and a course of instruction is 1 year. There are three-year courses for nursing students. Pharmacy

students are also taught by members of the medical faculty, as well as dental students. Also, medical students may be taught by members of the faculty of pharmacy, particularly in relation to drug products. While graduate instruction is available in public health, no degree is offered. The various medical auxiliary personnel, such as physical therapists, medical laboratory technologists, x-ray technicians, and occupational therapists, seem to be taught at a collegiate level in technical courses associated with the various universities and teaching hospitals.

The curriculum for medical training is gradually changing from the conventional German pattern of 50 years ago to the more fluid American program of today. There is heavy emphasis on anatomy, with some 400 hours devoted to gross and microscopic anatomy. Neuroanatomy is gradually becoming associated more closely with neurophysiology. There is beginning to be more systematic instruction in genetics and cytology. Biochemistry is well developed and emphasized, but biophysics is just beginning to be taught. Microbiology is extensively developed, and there are excellently equipped laboratories and institutes in this field. Here the German precisionistic influence is still keen, and the results remain impressive.

Pharmacology is being rapidly extended, in accordance with the explosive advance in the field. Antibiotics, however, are taught as part of microbiology. Research on antibiotics is conducted in the microbiology laboratories and in the institutes for infectious diseases. Pathology remains rather routine, with emphasis on post-mortem examination and cellular pathology. There is just beginning to appear some interest in dynamic and chemical pathology.

In general the clinical instruction is based on internal medicine, general surgery, obstetrics and gynecology, and pediatrics. There seems to be growing interest in psychiatry. The clinical specialities are generally subservient to the major clinical fields. There is as yet no systematic specialty training. An effort is just getting under way to organize specialty boards for certification of residency training in the various specialities.

Japanese medical texts are quite conventional. Most of the important American medical textbooks have been translated into Japanese and are available for the students. Most of the students seem to understand English, and may be able to read English medical material. Instruction, however, is chiefly in Japanese. Occasional lecturers and visitors may use English, and the staff and students seem able to follow the discussion. Some, indeed, participate.

The medical school libraries vary considerably. Some are locked and show little evidence of use. In general, there are surprisingly full files of the standard German and English classic periodicals in medical sciences and clinical fields. There are marked gaps in the medical journals of other countries. American medical periodical literature is just beginning to come in. Some of the libraries are excellent and show evidence of extensive use. The Library of Keio University Medical School is being supported by the Rockefeller Foundation and is comparable to a fairly good medical school library in the United States. It contains 65,000 volumes.

Many of the leading Japanese medical schools publish their own journals. Some of these are of long standing and high reputation. There are some 280 clinical medical journals published in Japanese. The majority of the medical science periodicals appear in English. Many have recently been inaugurated, such as the *Japanese Journal of Physiology*, Volume 1 in 1950; the *Japanese Journal of Pharmacology*, Volume 1, 1951; the *Japanese Journal*

of General and Applied Microbiology, Volume 1, 1954; and the *Japanese Journal of Medical Science and Biology*, Volume 1, 1947.

Some of the Japanese medical schools have teaching museums and special laboratories for new types of research and teaching. At the University of Tokyo (where one enters through the famed "Red Gate") there is a good teaching museum, with much material on radiation injuries and an amazing collection of human tattooed skins. Here there is a new tissue culture laboratory. Here also there is developing use of teaching films.

In the war bombing of Japanese cities, many of the medical school buildings and hospitals were severely injured. This occurred at the Keio University Medical School, but the Rockefeller Foundation has given funds for the erection of excellent new hospital and clinic buildings. The teaching hospital here accommodates 1500 patients.

Laboratory instruction in the preclinical medical sciences is relatively perfunctory except in anatomy and microbiology. There simply isn't adequate equipment for effective laboratory teaching in many of the other preclinical medical sciences. In the clinic years there is excellent bedside teaching. Amphitheater clinics are restricted to general demonstrations, and senior students and interns may participate as helpers in surgery.

The examinations are severe, and under all the circumstances it is rather remarkable that the over-all attrition in the medical schools is only around 5 per cent. The annual number of graduates, which may vary between 350 and 400, seems to be satisfactory for the population. Fortunately, the population increase has been halted. The Japanese seem to have accepted birth control procedures, and appear to be using them successfully.

Most of the preclinical laboratories in the medical schools have large numbers of keen and vigorous young graduate students. These are frequently crowded together, three or four in a small laboratory, but they work enthusiastically. Their teachers are generous with them and usually include them in the published contributions. Many of them are encouraged to seek an opportunity to work in American laboratories, and most of them seem proud to enter an academic career of teaching and research in the basic medical sciences, even though the salaries are low. Fellowships are beginning to be offered by various drug manufacturers. Opportunities are also being made available in some of the excellent new research laboratories of the drug companies for graduate students from the medical schools.

The graduate students in the preclinical sciences come with collegiate degrees. The training for graduate degrees is a rigorous one and follows conventional German academic lines. It usually takes 4 years to obtain a Ph.D. degree.

Industrial medical research.—The large drug manufacturing companies have good laboratories. Some of them are extremely well equipped, with capable and large scientific staffs. The Takeda Pharmaceutical Industries, Inc., in Osaka has just completed a fine new research building with excellent animal quarters and the most modern equipment. It has a vigorous and effective staff. The library here is outstanding and is especially strong in historical material relating to old Asiatic medical practices.

Most of the pharmaceutical manufacturing companies cooperate closely with the medical schools and arrange joint seminar sessions and other meetings. These are open to students, as well as to practicing physicians.

The Japanese drug companies are beginning to cooperate with American firms. While there was much pirating of new products, the situation seems to be getting under more satisfactory mutual cooperation. Here, as in other aspects of Japanese medicine, there

seems to be real desire to cooperate, but the Japanese seem to be waiting for Americans to make the appropriate overtures.

Postgraduate training.—The medical profession does not seem to be as well organized in Japan as in the United States, nor is it as influential. Local community medical societies arrange for scientific and clinical meetings at which reports are given and discussed. The medical schools are just beginning to organize postgraduate programs. Mostly these are short affairs, and there is no provision for credit or for the maintenance of systematic instruction.

Advantage is taken of foreign medical visitors, and joint meetings are readily arranged between local medical societies and medical school faculties. These sessions are usually well attended, and there seems to be often protracted conversation and discussion.

The faculty members of the Japanese medical schools are extremely courteous and kind. They are happy to show the details of their work and effort, and they seem to be very anxious to obtain suggestions and ideas. Most of them are badly in need of equipment, and all of them would be happy to receive copies of standard medical science journals in English.

Summary.—Japanese medical education is gradually changing from the formal rigidity and departmentalization of German medical education of a few decades ago to the more fluid and coordinated medical training current in the United States. Postgraduate medical training is just beginning to get started. American medical educators have a great opportunity and responsibility to aid. Whatever help can be given will really be appreciated.

Addresses

MEDICAL PRACTICE FROM '58 TO '78*

JOHN McK. MITCHELL, M.D.†

A prudent builder should forecast
How long the stuff is like to last.
(Swift)

It is my great privilege to have this opportunity to address the members of the Class of 1958 of the Albany Medical College, their families and friends, and their faculty. Among the latter there are a number whom I know personally, and for whom I have the highest esteem.

I have no illusions that you, members of the Class, are now feeling a sense of privilege equal to mine, for, unless you are far different from the students of my more immediate acquaintance, you have long ago decided that lectures are "for the birds." Fear not on one score, however, because I am always mindful of the saying, "Good advice is something offered to young men by old men after they have gotten too old to set them a bad example."

Rather, it is my purpose today to talk about the future; first, to explore the expected changes in population in the United States, its number, age, and geographic distribution, and to examine what this portends in terms of medical practice. Next, to discuss what other factors, inside or outside of medicine itself, may materially influence its practice. And, finally, to attempt to bring these different elements into focus on the period during which you will be practicing medicine.

In all of this, I will draw on a series of papers presented at the Congress on Medical Education in February, 1958, especially on that of Dr. Dudley Kirk of the Population Council, Inc., entitled "Population Characteristics and Trends and Their Implications in Medical Education" (2). Wherever population figures are quoted, they are Dr. Kirk's.

Certain facts about population changes in this country are matters of common knowledge, such as:

1. Families are larger than they were 20–30 years ago.
2. Not only are more children born today, but more survive.
3. Not only do more people live to reach old age, but they live longer in old age.
4. A great wave of immigrants came to this country in the early years of this century, but their number has now declined.
5. As a result of all of the above factors, there has been a great increase in the total population of the country. (It doubled between 1905 and 1955.)
6. During the depression years, the birth rate was very low.
7. The great wave of new babies after 1940 has inundated the schools and high schools, has reached the colleges, and will soon be felt in the professional schools.

* Commencement address, Albany Medical College, May 28, 1958.

† Dean, School of Medicine, University of Pennsylvania.

8. Many people have been moving from the farms and small towns to the cities and their environs.

9. At the same time, people have been moving from the cities proper into the suburbs which, with new expressways and high-speed transit lines, have extended farther and farther into the surrounding countryside.

10. Many Negroes have moved from the South to the North and the West.

11. The West Coast and Florida have been growing rapidly.

Dr. Kirk referred to some of the above well known developments in his paper, added a number of less well understood features, and made some predictions. I paraphrase rather than quote:

1. "Barring catastrophe," the total population will continue to show a great increase, at a conservative estimate reaching 221,000,000 by 1975, an increase of 56,000,000 over 1955.

2. Assuming no drastic change in the economy of the nation, the "baby boom" will continue.

3. The years of low birth rate ran from 1925 to 1940. As a result, there are today a relatively small number of young adults in the 18–33-year age group.

4. The number and proportion of our older people will continue to increase steadily and surely.

5. Geographic population redistribution will continue, the greatest gains being in the West, Southwest, and Florida, with some areas of rapid growth around the big cities in the East. "The Census Bureau estimates that by 1975 two-thirds of our people will live in the metropolitan areas, and, of these, the greater part will then be residing outside the central cities."

Let us now turn our attention to other factors, also matters of common knowledge, that have already materially affected medical practice or may do so in the future.

1. The development of antibiotics and new chemotherapeutic drugs has revolutionized medical practice. Their widespread and often indiscriminate use, however, has produced a new set of problems in the sensitization of patients and the appearance of resistant strains of pathogenic organisms.

2. Better sanitation and feeding and the success of immunization programs have saved the lives of many babies and reduced illness in childhood.

3. Cancer and heart disease have become the great killers in old age, and they, along with mental disease, also produce the greatest amount of sickness in old age.

4. Mental illness, occurring at all ages, has become the No. I medical care problem.

5. Automobile accidents have become an important factor in the production of illness.

6. Voluntary health insurance and other factors have greatly increased the use of hospitals.

7. The number of admissions to the "public wards" of both private and public hospitals, for the care of acute illness, has decreased markedly. This is necessitating changes in the traditional methods of medical education at both the medical school and graduate level. It is producing a serious problem in residency training in general surgery and the surgical specialties, since it deprives our future surgeons of what has been, in the past, the great training ground for the development of operative skill and judgment.

8. Medical care plans of industrial, labor union or other origin, are gradually growing in size and popularity and may well outstrip ad hoc financing of illness, except among the more wealthy elements of the population.

9. Areas of relatively high income and more education utilize much more medical care than their numbers alone would indicate.

10. The percentage of physicians in specialty practice continues to rise.

11. The number and proportion of physicians who practice in groups or under institutional or medical care plans, as opposed to solo practice, are constantly increasing.

Thus, I have outlined two types of factors that, *in toto*, have had or will have a profound effect on the practice of medicine. One type is related to past and future changes in population and the other to a variety of developments in economics, organization, and medical science. Now I would like to explore with you how these matters may affect certain specialties and, hence, your possible choice of one of them, the place where you will choose to practice, and the plan under which you will work. In doing this, we should not concentrate solely on the immediate future but should also look ahead about 20 years when you will reach the peak period of your professional career.

General practice.—There is no question that the relative number of general practitioners has declined sharply during the past half century. The reasons for this, however, do not seem to rest heavily on any of the matters just discussed.

General Practice and Rural Practice are not synonymous, but there is much in General Practice that lends itself best to the rural situation. The improvement in availability and nature of hospital facilities in rural and semi-rural areas, largely through the stimulus of the Hill-Burton Act, is a great boon to general practitioners in those places, and may prove to be a determining factor in the choice of general practice by many new graduates.

The recrudescence of interest in the patient as a person, and the realization of the shortcomings of many specialists here, should favor General Practice. On the other hand, one of the virtues attributed to the general practitioner has always been his lifelong association with the patient and his family which, supposedly, gives him complete knowledge of the family history, and of economic, environmental, social, and emotional factors in their relation to illness. Yet, Dr. Kirk's statement that 20 per cent of the population changes residence each year automatically reduces this advantage.

How important the recent powerful organization of general practitioners may be in attracting new graduates into the field is an open question.

Pediatrics.—Probably the closest of the recognized specialties to General Practice is that of Pediatrics which, in many instances, consists of General Practice within an age group. Improved sanitation, more general knowledge of proper infant feeding, the success of immunization programs, and the use of antibiotics have wrought great changes in pediatric practice. Always the most preventive medicine-minded of practitioners, the pediatrician is becoming even more so and nurturing his interest in growth and development, both physical and emotional.

With a continued baby boom there will be plenty of need for more pediatricians, especially in smaller and ex-urban communities not now supplied locally.

When a pediatrician receives as a patient and cares successfully for a newborn infant, he is almost guaranteed an average of two new patients, either immediately or within a few years, i.e., the other infants and children in the family. Further, very young people, like very old people, need much more medical care than do other age groups.

The pediatrician is also moving to fill the medical care gap existing in that morass of extraordinarily rapid physical growth, of immense appetite for food, fight, and frolic, of internal struggle between childishness and maturity, of external strife between child and

parent, known as adolescence. No age group has been so neglected by medicine as this one; none is less well understood and less well handled. It has, in the past, fallen between Pediatrics and Internal Medicine, between the child psychiatrist and the adult psychiatrist. The field is open; there is much to be done.

Internal medicine.—In view of the constantly increasing number and proportion of older people in the population, Geriatrics plays a correspondingly important role in the practice of Internal Medicine.

You will recall that there are today a relatively small number of young adults between 18 and 33 years of age, owing to the low birth rate of the depression years. Accordingly, there will be a period starting, roughly, 40 years from now during which there will be a recession in geriatric practice.

In recent years the burdens of the internist have been greatly lessened by the subsidence of two of the common diseases of yesteryear, tuberculosis and syphilis. Although the success of antibiotics has lessened the load too, these drugs have no effect on the two great illnesses of later life, cancer and heart disease. Penicillin may, however, reduce the incidence of rheumatic heart disease through its prophylactic effect on rheumatic fever. Neither do the antibiotics play a significant role in a number of other chronic ailments such as arthritis, diabetes, gastro-intestinal and endocrine dysfunction.

What is going to happen? Will more and more internists confine their work to such subspecialties as Cardiology, Gastroenterology, and Hematology, or will there be a smaller number of even more highly trained specialists in the medical subspecialties and a separate and larger group of internists who will be, in essence, general practitioners, excluding Surgery, Obstetrics, and Pediatrics? At present there is some movement in both directions with no decisive trend visible.

General surgery.—In referring to the position of general surgery vis-à-vis the surgical specialties, Harvey Cushing (1) once said, "The surgical specialties should represent merely grafts on the parent stem, for in their cultivation as separate plants they may cease to blossom and bear fruit."

Certainly today the general surgeon is firmly entrenched as the key figure in surgical specialty practice. The amazing increase in the number and variety of conditions aided by surgical intervention has created many new reservoirs of patients. Changes in characteristics of population have less effect in surgery than in other specialties, since surgery reaches into all age groups.

Surgery is in the most favorable situation in insurance and medical care plans. The antibiotics have made operations safer, hence more of them are possible. Indeed, it seems that the only development that might affect surgery deleteriously is a cancer cure. Even that might leave a large number of patients in whom the basic lesion would still require operative intervention.

Obstetrics.—Obstetricians, like pediatricians, seem destined to be in great demand as long as the birth rate remains at or near the present level. There will probably be a temporary decline in the number of births in the next few years due to the diminished supply of young adults now in the 18–33-year age group. However, this will probably soon be overcome by the yearly increase of those born since 1940 for, as Dr. Kirk tells us, "Today the average American woman is married before she reaches voting age, has her first child at age 22 and her last at age 26."

Psychiatry.—It is trite to say that in recent years mental illness has increased at an

alarming rate. By some this is taken to indicate some mysterious, unexplained deterioration in the nervous and mental stamina of people. By others it is attributed to the increased complexity and stress of modern living. Less often recalled is the concomitant increase in the concern of people for their health, both physical and mental, and in the sequential attention devoted to them by physicians. With this has come both a re-labeling and a new attitude toward many conditions once simply accepted as part of life. Thus, the "town drunk" has become an "alcoholic" and is looked upon, quite properly, as a sick man. The "half wit" is no longer tucked away on a farm or kept mostly indoors in a house on a back street, but is institutionalized.

While no one should deny the seriousness of the present wave of teen-age crimes, at the same time it should be realized that many of the escapades of "the crowd" of exuberant and otherwise unoccupied young bucks, formerly dismissed with a "boys will be boys," today are widely publicized as the acts of a "gang" of "juvenile delinquents."

Fifty years ago, who ever thought of consulting a doctor because porch-size Nancy "sucks her thumb" or yard-size Bill "bites his playmates" or school-age Jerry has "temper tantrums." Viewed thus, one becomes less concerned at the statistical increase in mental illness.

Whether or not there has been an actual increase in mental illness may be argued, but there can be no disagreement with the statement that many more people than in the past are now under treatment for mental conditions both in and out of hospitals.

There will almost unquestionably be an increasing demand for physicians with understanding and skill in handling the manifold problems of mental health and their physical manifestations. The problem before us today is, therefore, not one of the need, for that is obvious, but of how the need is to be met, for met it must be. It seems to me unlikely that the specialty of Psychiatry, as now constituted, with its long course of training, can possibly meet the demands alone.

This is the more true because so many of those now training in the field are preoccupied with psychoanalysis which, by its very nature, is capable of handling only a thimbleful of patients when we are faced by an avalanche.

Two possibilities present themselves. Psychiatry may become an even more highly specialized form of practice than it is today, caring only for the more serious illnesses. Meanwhile, other groups, especially general practitioners, internists, and pediatricians with augmented training, would take over the care of milder cases. Or, psychiatry may expand like medicine as a whole, and produce a large group of physicians prepared to handle the less serious disorders and to practice preventive psychiatry—to be, in other words, the general practitioners of psychiatry.

In addition, there might develop subspecialty groups trained explicitly to care for certain types of psychiatric disorders, as internists now subdivide into gastroenterologists and cardiologists. In the latter instance, we may possibly see curricula so planned that those preparing for psychiatry may take a different medical school course from those entering other specialties. The possibility of the development of separate schools for psychiatrists has even been raised by Kubie (3).

I already hear the muttering thunder of rejoinder from the basic medical scientists insisting that the psychiatrist, above all others, needs thorough indoctrination in scientific method. But must the clinical psychiatrist have the same courses in anatomy, biochemistry, and microbiology that are now required of all medical students? Would it not be possible to

design courses suitable to his needs, so that he could have much more psychology and sociology than it is possible to schedule in the present medical curriculum?

There are a number of obvious disadvantages to either of the above arrangements, but in the face of the stark necessity of producing more physicians trained to handle mental illness, they should be weighed against the alternative of having clinical psychologists, social workers, and non-medically trained psychoanalysts take over a large share of the treatment of patients with mental disease.

There will be no lack of opportunity for the well trained psychiatrist in the future. It is my hope, however, that those of you who are attracted to that specialty will enter it with a broad concern for its development along lines that will help medicine to meet the stupendous problems that face us, and not because of the gleam of a Cadillac that it brings to your eye.

The organ-system specialties.—Time does not permit a separate analysis of each of the recognized medical specialties. In general, it seems that the organ-system specialties are likely to remain relatively small, highly specialized groups, confined chiefly to the larger medical centers. They may, indeed, decrease in size as more of their work is taken over by general practitioners, internists, pediatricians, and general surgeons. There are, of course, exceptions to this generalization, among them orthopedic surgery.

While children's orthopedics has lessened markedly with the subsidence of osteomyelitis and the recent inroads on poliomyelitis, there remains the automobile accident. Unless and until we can teach people more driving caution, it appears likely to remain a source of much operative work for orthopedist and general surgeon.

Other.—In general, it seems possible that medicine may develop along two lines, as suggested by Parsons (4): family practice and occupational practice, that will cut across the traditional division by specialties. This could result in a regional redistribution of physicians. Thus, most general practitioners, pediatricians, obstetricians and gynecologists, a proportionate share of internists, general surgeons, and appropriate supporting specialists would settle in the family home areas surrounding the cities and in semi-rural and rural regions. In these areas there would develop hospital and clinic facilities suitable for the care of the great bulk of illnesses occurring in families.

These changes would be detrimental to the big mid-city medical centers which would, perforce, turn their attention increasingly to occupational medicine. The centers might stem the tide for a number of years if expressways and rapid transit lines run close to their doors and if they are able to provide suitable parking facilities. They would remain the location of choice for many highly specialized procedures.

The migration of physicians and hospitals to the suburbs has indeed been taking place for a number of years, and, in at least one case, a medical school, Leland Stanford, is following suit by moving its entire plant from the center of San Francisco to suburban Palo Alto, some 20 miles away.

If I did not know so well that the senior medical student is a confirmed skeptic who demands that every statement be documented, I might be more inclined to warn you against a too personal application of what I have said. Also, I am sure that you have had a good course in statistics and know what can be done with figures no matter how carefully recorded, and that I have selected those that I wanted to use. I might, for example, have told you that the Statistical Abstract of the United States, as reported in an article entitled "Spouse Leak," in the New Yorker, shows that in 1950 there were 23,079 more married

men than married women in the state of California. Meanwhile, in your own state of New York, there was an excess of 43,098 married women. Tell me, then, in which state should an unmarried female gynecologist start her practice.

More seriously, now, I would suggest that you put more constructive study into your choice of a specialty than I suspect some of you did into the selection of an internship. The fact that Uncle Bill spent 2 years in a hospital 20 years ago and says it was excellent, or that Joe Zzyypp was there 3 years ago and says the food was good, is not a very sound method of choice. Immediately less reprehensible, but far more serious because it predetermines your whole career, is the choice of a residency because Dr. Veryable has a good opening in Xanthomatology in the University Hospital.

With apologies to Jonathan Swift, I might change my opening quotation to read:

A prudent doctor should forecast
How long his work is like to last.

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ADDRESS TO THE 1958 GRADUATING CLASS GEORGE WASHINGTON UNIVERSITY SCHOOL OF MEDICINE

HAROLD STEVENS, PH.D., M.D.*

It has been a rewarding and satisfying experience to have shared our many hours together and to have watched and participated in your growth. We, the faculty, are saddened by this parting but proud and confident that our efforts as teachers have come to full fruition. It is not our hope that you will imitate or even emulate us, but rather that you will utilize the principles we gave you to surpass us. I know you will never forget the debt you owe, not only to your faculty but to the many generations of physicians and scientists that preceded all of us. Whatever heights of professional accomplishment you scale, always remember with humility that you stood on the shoulders of a giant.

To you, the friends and family of the new doctors, I wish to welcome you to an elite circle in which you now have a lifetime membership. The dues, for which you will get a receipt tomorrow, are no longer as onerous as they were in the last four years, but the other obligations have increased.

It is now your special duty to preserve and to enhance the effectiveness of the doctor. This is a heavy charge. The new doctor or old one, for that matter, is often not easy to live with, and your role is a complex and responsible one. At times his antics may perplex you. His moods, subject to change without notice, will baffle you. His preoccupation will isolate him from you. His demands may appear unreasonable and capricious. At times you may become critical of a medical education that did not prepare him emotionally for the exacting life of service. You may be right. We, the faculty, have labored diligently to equip our graduates, but medical school is only part and merely the beginning of his education. This truly is a commencement exercise, for now another phase of ceaseless learning begins. And now, except for you, he is on his own.

In a short time he will walk into the ward of a hospital where he will be confronted with trying problems and, at times, equally trying people. Is he emotionally prepared to make incisive and sound decisions of far reaching consequences to the precious lives of his patients? Will he recognize, and how will he handle, his inevitable anxiety? With the passage of time and with experience the doctor acquires, by slow and painful accretion, a protective patina of professional maturity. But experience is costly; in fact, experience is just another name for our mistakes, and no doctor of any age is ever free of the gnawing self-reproach for the errors of judgment that none can escape. This source of anxiety cannot be avoided. It is a built-in occupational hazard. The really crucial and compelling questions are: Will he recognize his anxiety, and how will he handle it? On the answers to these simple questions rests the momentous issue of the doctor's effectiveness. How have others fared before him? Usually creditably well, but too often the young anxiety-ridden doctor, in his blind despair, lapses into one of two tactics of self-defense that dangerously distorts his judgment. In one, the young doctor confronted with a vexatious threatening problem

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may be overwhelmed by a sense of helplessness and panic. Because he can't reproduce the logic and learning of his teachers or of the textbooks, he finds himself wanting. His self-esteem and morale are shattered. Self-doubt paralyzes his mind. This self-assaultive reaction to anxiety follows because he expects too much of himself, because he has an over-idealized image of what he should be, of what others expect of him, of his role as a beginning physician.

This unrealistic, inordinate, self-generated demand for perfection not only impairs his judgment but distorts his relationship with his patient, to whom the doctor's anxiety and uncertainty will promptly radiate either through verbal or nonverbal communication. The doctor afflicted with this self-assaultive reaction to duress is ineffectual because he is inaccessible to the obvious truth that his professional growth can be nurtured only by time and by a consecutive series of experiences in meeting, facing, and solving problems. Only by benefiting from the inevitable mistakes and by assimilating his experiences with equanimity is he made wiser and more effective to help his future patients. Usually, he struggles through the ordeal, shaken, but in the long run this trial by fire gradually strengthens the fabric of his self-esteem.

In contrast, the second technique for coping with anxiety is quite likely to congeal into a fixed role. Also, it is more common and more subtle. This second reaction is characterized by the development of feelings of omniscience. It subverts the doctor into a swaggering, tedious, egocentric caricature. He becomes insensitive to others, often is pompous, humorless, and arrogant, as if to shout down his own inadequacies. He is lacking in humility, opinionated, and subject to paroxysmal pontifications. But the pathognomonic sign of this common occupational stereotype is the feeling of omniscience. Moses Maimomides, in the twelfth century, recognized the importance and general extent of this phenomenon. He stated . . . "the soul is subject to health and disease just as is the body. The health and disease of both depend upon the beliefs and customs which are peculiar to mankind. . . . Within the sum total of diseases there is one which is widespread and from which men rarely escape. This varies in degree in different men, just as all bodily diseases vary. . . . I refer to this: that every person thinks his mind more clever and more learned than it is. . . ."

If the epidemiology of feelings of omniscience in doctors were investigated it would be found to be of high incidence, of varying degrees, but most common and conspicuous in the emotionally impoverished. This universal temptation to play God threatens all physicians and may vitiate their effectiveness. The new doctor is particularly vulnerable.

This inclination to play God is given further impetus by a great many patients who, because of their own intrinsic dependency, impute God-like powers to the doctor. They eagerly look to some one authoritative figure in a child-like manner, hoping to divest themselves of adult responsibility and to accept his words and ministrations as if they were divine magic. This tendency to abdicate adult roles and responsibilities is potent and widespread and probably underlies the strength of totalitarian states that offer to trade individuality and self-sufficiency for a feeling of security and dependence. A further bonus is offered of basking in the glory and identifying with the leader.

It should be emphasized that in all patients, regardless of their emotional equipment, there is the realization that because they are sick they need help. The average patient concedes that his former self-sufficiency is currently and temporarily in abeyance. He understandably looks to the support of the doctor to restore him quickly to his former level of

health and proficiency. The temporary regression by the patient to a state of dependency should be recognized by the doctor as the usual and natural response to the duress, incapacity, and threat occasioned by the illness. In fact, the patient's capacity to appeal openly for help is a manifestation not of weakness but of strength that can be channelized by the physician into a collaborative effort that will speed the convalescence. The patient's frank admission of dependency should not incite you as physicians to revel in fantasies of omniscience, nor motivate you to parade your imagined superiority. In the Talmud the pointed question is asked—"Why was man created on Friday?" The answer follows, "so that if he becomes overbearing one can say to him—the gnat was created before you."

How, then, can the new doctor detect these subtle forces and deflate these feelings of omniscience? The obvious and ancient answer is "Know thyself." But from where does one learn about the self; about one's interactions with others? How does the new doctor gain this 20/20 insight? There are at least three avenues of self-understanding: first, through study of the social sciences; second, through reality checks which the family unit provide; third, through development of spiritual and ethical values.

The doctor as a scientist would naturally seek some light from the social sciences: sociology, anthropology, psychology, and indeed by diligent application he can learn much from the data of these disciplines. The utilitarian value of the social sciences in broadening the physician's limited scope deserves more consideration than the crowded medical school curriculum has given it. The very heart of the practice of medicine is knowing and dealing with people in relationship to yourself and to the community.

It must be admitted that the doctor's specialized and necessarily narrow background of knowledge makes it difficult to assimilate the special idiom of the social sciences. But knowledge of human relations is a professional imperative, and, unless you dedicate yourself to understanding human behavior, you will never rise above mediocrity. This means a systematic program of life-long reading in a field that is evolving as fast as physical science, and with a specialized language that changes and enlarges just as fast. This means further sacrifice of your meager leisure time. You must decide early in your career either to allocate time for intellectual growth or sit back and live off of principal. This is the doctors' dilemma.

The second avenue through which the young physician can fulfill the admonition "Know thyself" is through reality checks. These are provided particularly by his interactions with his family and intimate friends. You who are seated here tonight serve as the mirror in which each sees himself reflected. Our self-evaluation is determined, to a large extent, by the way other people react to us. We gradually learn to see ourselves as others see us and to evaluate ourselves accordingly. Thus, the doctor's family can serve as a stable point of reference, as a reality check that can keep him earthbound when soaring flights into fantasy of omniscience tempt him. The unique opportunity for ego-gratification and for social approbation offered by the practice of medicine may drive the doctor to assume roles that he may relinquish only after painful and devastating personal experience. But your family will often clearly see the truth and keep you regularly and unmistakably informed—particularly your wife and children, who will offer unsolicited observations often in vivid and graphic language. The sustained reality check provided by your family unit can, after many years and many changes of role, ease you solidly and comfortably into a stabilized and realistic role. Should this corrective experience occur, you then will know yourself, your resources, your limitations. You will recognize the hidden manifestations of anxiety and

thus can effectively handle the complex patient-doctor relationship. Most important, your self-esteem will be preserved and you will not be motivated to use your patients as a foil for blind insatiable hunger for ego-gratification. Sincere humility will replace the feeling of omniscience, and energy expended wastefully to maintain false roles can be diverted to constructive ends. In the words of the great Galilean physician, "You shall know the truth and the truth shall make you free."

With a clear 20/20 conception of self the doctor is emancipated from the subtle and often tyrannical forces which drive him to erect defensive facades. Free of such pseudo-strength, he can deal fairly, sympathetically, and realistically with his patients. And once the doctor recognizes the protean patterns of anxiety in himself, he then can perceive and manage it in his patients. Further, he can handle the frequently encountered expressions of hostility.

Recently, I was asked to examine a boy of 10 because he had been limping for a year. After the neurological examination I sent the child from the room and as gently as possible informed the parents that the child had progressive muscular dystrophy. Their reaction was unbridled hostility toward me. Who did I think I was, giving them such a sinister diagnosis? Hadn't they taken the child to other physicians who said he would grow out of it, etc? Their castigation was relentless, and it was apparent that nothing but further aggravation of the anxiety of the distraught parents could be gained by argument or by launching into a defense of my reasoning or by enumerating my professional qualifications.

The temptation to "tell off" such people is quickly neutralized by recognizing that hostility is the common face of anxiety and by telling yourself that "My reputation will neither stand nor fall on their opinions." This silent incantation can be useful many times in many ways and should be kept handy—for example, when the young physician's self-esteem is threatened by the sharp criticism of an older colleague whose own power operations include regular derogation of his younger fellow physicians. Under such conditions it may be helpful to recite the above litany. And remember, never aspire to have everyone like you. Only the young child has a valid need to feel that everyone likes him. An adult well may be as proud of his enemies as he is of his friends, and an adult who likes himself only when someone smiles upon him is an adult in trouble. The compulsive pursuit of universal acceptance and approbation is strictly from emotional hunger. The great physician, Luke, reiterated, "Woe unto you when all men shall speak well of you."

The doctor with insight and with mature emotional and intellectual resources will be protected in large part against the ever present desire to be omniscient.

The third approach to fulfilling the need to "Know thyself" is through the development and deepening of spiritual values. The medical school graduate enamored with science, mechanistically oriented, empowered with knowledge and authority, and equipped with potent remedies, may see no need for divine assistance. But one of the greatest deterrents against playing God is the recognition that the job has already been filled. Not all young physicians acknowledge existence of a superior being and force. This is paradoxical, since in his daily life spiritual forces are constantly manifest. With maturity, this awareness evolves, particularly if a crisis or if adversity erupts in the physician's personal life. Still, many physicians fail to recognize the hand of God until they feel the back of it.

In parting, let us remember our debt to the many great and dedicated physicians who prepared the way and left this magnificent tradition of medicine for all of us. Remember that your education is only beginning. Remember that yours is a life of service and that the

finest gift is to give of yourself. To think logically and act rationally, try to perceive, comprehend, and control the subtle but powerful forces that reside within the self, motivate and color all our social intercourse. Acquaint yourself with the social sciences, for the practice of medicine is a branch of social science; and even with its limitations your personal and professional lives will be enriched by the knowledge of man as a social animal. Alexander Pope said it better: "Know then thyself. Presume not God to scan. The proper study of mankind is man."

Look to your family and friends for the necessary insight into yourself and seek rewarding experience *beyond* your professional life, so that the need to exploit your patients for ego-gratification will be minimized and the need to play God will be removed.

Avoid sham and pretense. Know what you are, and be what you are. And remember it is expected of you only to be just, love mercy, and walk humbly with your God.

ABSTRACTS FROM THE WORLD OF MEDICAL EDUCATION

A New Program

The sweep of experimentation in medical education circles the globe. Significant developments are in progress in many countries, and these developments have international significance. The Editorial Board has felt for some time that there should be a program to gather material on developments in medical education from around the world. Plans were crystallized at their meeting on October 12, 1958, and in this number of the journal there appears a new section "Abstracts from the World of Medical Education." It is our intention to abstract significant articles on medical education. This development is another step in recognition of the fact that, as the only journal exclusively devoted to problems of medical education, we have an international responsibility.

JOHN Z. BOWERS, M.D.
Editor-in-Chief

The Education of the Scientist. SIR ERIC JAMES. British Medical Journal, pp. 575–76 (Sept. 6), 1958.

The spectacular growth of knowledge during the last half century has created many difficulties for the educator. Although at its deepest level the task of education has remained the same—to produce rational and civilized human beings—the meaning of civilization has broadened, and it has become the educator's obligation to produce more and more individuals able to reach the frontiers of knowledge, while with every year these frontiers are becoming more remote. After such background observations, Sir Eric James, High Master of Manchester Grammar School, examines the two main aspects of the education of a scientist: his education in science and his general education. As to the first part, he thinks that real progress can be claimed in his country in both quality and quantity of science teaching. Science is now part of the education of almost every normal child from the age of 11 on. It is pointed out, however, that under the prevailing British School system children often have to decide too early whether they wish to specialize in science, and no aspect of education is today more criticized in England than the so-called "sixth form specialization." The author feels also that there is still much need for improvement in the methods and content of science teaching on the pre-university level. Courses, he suggests, should be pruned of much useless factual material, and the approach to science should be based much more on an attitude of research rather than on the passive absorption of facts. As to the general education, he recalls that "stock figure of educational mythology," the narrow and uneducated scientist with no view beyond the limits of his special field. He warns, however, against the danger of considering science in itself as narrowing. Science, he says, must always be regarded as one of the greatest channels by which human spirit may be enriched, although it must be admitted that the general education of the scientist is more important than the education of the arts man in science. The question is how to modify the specialized education of our scientists so that we may produce full personalities. One method is to insist that scientists should study some subjects unrelated to their interests. But the mere fact that a subject is not scientific does not guarantee its broadening effect. Serious thought must be devoted to the *content* of our non-specialist studies, and the educator must ask

himself continuously whether study at this level will help science specialists to a fuller view of life or to more secure judgments. There are also those who believe that the humanization of the scientist can be achieved through courses in history and philosophy of science itself. This, in the author's view, would require unusually gifted teachers and pupils. For him, there is no doubt that we must look to "outside subjects" to humanize our scientists, but that they must be chosen with a vision of what they may be expected to achieve and taught by people interested in that particular task. The aim must be *stimulus* rather than *instruction*. In this connection the author reminds us also of the need of rediscovering, both in schools and universities, the part played by *leisure* in education and warns against the danger of so filling the students' lives not only with specialist studies and over-frequent examinations, but also with general education and social activities, that they may never have time to read or talk or even simply to think what it is all about.

Galen in China. DONALD GOULD. The Lancet, **2**:633–35 (Sept. 20), 1958 (London).

In this paper the author, a professor of Physiology at the Univ. of Malaya, reports on his experiences during a visit to China in 1955. What most impressed and disturbed him there in the field of medicine was the costly, strong official drive to boost traditional remedies and practices which clearly seemed to obey political rather than scientific reasons. Early on his trip he had been given to understand by one medical officer he met that the traditional Chinese "village doctors" were being trained and used for certain urgent and widescale medical activities until they could be replaced by doctors trained in medical schools. Since China has 600 million people, about half a million traditional practitioners, and only some 70,000 doctors trained in Western methods, this seemed a wise course. However, the author soon found out that the accent was not on using the traditional doctor as a medical auxiliary but rather on forcing the acceptance and admiration "of the whole established rigmarole of native therapy." An article entitled "Why Our Western Trained Doctors Should Learn Traditional Chinese Medicine" by Dr. Fu Lien-Chang, President of the Chinese Medical Association (*Chin. M. J.*, 1955, and reproduced at the front of eight other Chinese professional journals) confirmed this impression. Dr. Fu Lien-Chang deplores the ignorance of Western-trained doctors of Chinese traditional medicine and emphatically states that its study should be considered as a task much more important than the training of old-time physicians in Western Medicine. After visits in Peking to the Institute for Research into Herbal Medicine and the Institute for Research into Acupuncture, no doubt was left in the author's mind as to the direction of the effort demanded. These institutes, says Dr. Gould, are not research laboratories but propaganda bureaus, and he gives a detailed account of his reasons for this assertion. Furthermore, the gist of what the author was told about the projects for medical training in China, as well as the assessment of the situation given last year by Ho Piao, vice-minister of Health, shows that earlier plans for boosting traditional medicine are being vigorously pursued. As far as cooperation between the old and the new is concerned, the picture seems to him wholly one-sided. It is the author's view that the whole medical effort in China tends to be reduced to the faithful practice of official decrees. Doctors must recognize the Party as the only competent authority in medicine, and the forcible dilution of Western medicine with old magic is an attempt to produce "a new species of medical animal," still capable of acting in a priestly role as comforter of the sick and of preaching modern and indispensable techniques according to the book, "but without that perilous turn of mind that kicks against the pricks and asks a sound argument for every thesis." The author predicts that China will enter "a period of inanition exactly parallel to that which seized medicine in Europe for centuries under the grip of galenical philosophy," and that the only advances permitted will be those introduced from outside after careful sifting and approval by the State.

Medicine in the New India. R. E. REWELL. The Lancet, **2**:574–77 (Sept. 13), 1958 (London).

The author, a pathologist at the Women's Hospital, Liverpool, was invited under the "Colombo Plan" to India, where he stayed from early 1956 until early 1958, working entirely among Indians, with Indians, and for Indians, mostly at the Institute of Obstetrics and Gynaecology at the Government Hospital for Women and Children in Madras. This

article is an account of his activities and experiences during this period. In India, he reports, Western medicine on the British model has been established for a long time. British methods in teaching, as in most other medical activities, still predominate. Some improvements in the organization of medicine have been introduced recently by the Central Government (e.g., the standard of qualifying examinations has been made uniform at an internationally accepted level; a number of new Colleges have opened, and new buildings have been erected; the senior staff has been especially trained, many of them abroad). The author found the general standard of medicine higher than he had expected. The Indian doctor works mostly among poor, ignorant people and faces heavy competition from cheap quacks, including the practitioners of Ayurvedic "medicine" (a system based on the old humours which is encouraged by the Government). Nevertheless, Indian physicians have remained keen and alert and continue to think of what will be best for the individual patient. They tend to adapt Western knowledge to local conditions, which, as the author had occasion to learn through his own experiences, is not too difficult in India. Government schemes, however, are by no means all helpful to progress, because of too rigid an administration and the oriental genius for "red tape" and procrastination, especially over finances. A semi-military control of personnel prevails in hospitals. All the free hospitals, including the teaching ones, and almost all research institutes are run by the State Governments. The pay of doctors is extremely low, even by local standards. The author found the standard of laboratory medicine good wherever he went in India, although confined almost exclusively to academic centers. Buildings and equipment were simple but adequate. Biochemistry is largely in the hands of science graduates, but not Bacteriology. Blood transfusion is neglected. Established research institutes continue, and some new ones have opened, especially in the important field of nutrition, but they are still too few and hampered by arbitrary selection of staff. Describing at length conditions at the Institute of Obstetrics and Gynaecology in Madras, the author points out that its main object is teaching and that for this there are adequate facilities. Much of the teaching was informal, but seminars and lectures were also held. About 40 postgraduates were admitted each year, most of them for a year's period. The Hospital, to which the Institute is attached, undertakes about 13,000 deliveries and 5,000 operations each year. Many of the patients come from long distances; all are poor and generally illiterate and show a high degree of anemia and infestation. Much stress was laid on "family planning," but many patients came for treatment of sterility which carries serious social disabilities. After a giving brief outline of the social and economic background of medical practice in India today, Dr. Rewell emphasizes in his conclusions the fact that India remains a poor country and needs help to raise her standards. Western experts are welcomed and are given every facility.

The Patient's Reaction to Bedside Teaching. HANS PREUSS and PHILIP SOLOMON. The New England Journal of Medicine, No. 11, pp. 520–25 (Sept. 11), 1958.

In *Essentials of Approved Internship* (Chicago, 1955, 27 pp.) the Council on Medical Education and Hospitals of the A.M.A. stressed the importance of "daily, regularly organized ward rounds with well conducted teaching at the bedside." While the Council emphasizes the training function of ward rounds, psychiatrists who act as liaison physicians in general teaching hospitals are apt to be more sensitive to the patients' reactions to bedside teaching. If the patient is considered only "a case," bedside teaching can become deleterious and traumatic to him, whereas ward rounds conducted with adequate concern for the patient's feelings may be a source of reassurance and comfort. In this paper an attempt is made to evaluate teaching ward rounds, as they take place at the present time, from the point of view of the patient's emotional reactions. The authors (both psychiatrists at Harvard Medical School and Boston City Hospital) point out that there is very little literature on the actual effects of ward rounds on patients, although numerous medical textbooks discuss the patient-physician relationship. Recently, however, at least one serious effort was made, by psychiatrists of the Mount Sinai Hospital, to explore the immediate reactions of patients to ward rounds (see M. R. Kaufman, A. N. Franzblau, and D. Kairys, Emotional Impact of Ward Rounds, in *J. Mt. Sinai Hosp.*, **23**:782–803, 1956). But these authors limit their findings to the patients' verbal expression and behavior during ward rounds

and do not offer a psychiatric evaluation. In the present study, after briefly describing the methods of conducting ward rounds at Boston City Hospital, the authors give the results of a study of 44 patients, on 32 ward rounds, over a period of 8 months, and their evaluation from the psychiatric point of view. Case material of these patients is presented, and their reactions toward rounds in general, as well as to each of their different phases, are described. In their discussion of their findings the authors make some suggestions for the improvement of ward rounds from the point of view of the patient, in order to diminish the emotional impact on the latter. They think it is important for the physicians to know the amount of anxiety and fear the patient already has related to his illness. This should be evaluated, and, if there is too much, presentation at the bedside should be kept to a minimum. It is also considered essential that the patient should be prepared for ward rounds, and an effort should be made to direct his anxiety-bound fantasies realistically, so that he will regard ward rounds as a source of help and not as a threatening situation. Of foremost importance to the student is the manner of conducting rounds. Students who have been taught recognition of the importance of the "whole patient" and the principles of "Comprehensive Medicine," are often, during ward rounds, painfully aware of the shortcomings of their teachers and their traumatic effect on the patients. Ward rounds, therefore, must be conducted with constant awareness of the patient's feelings, and as soon as possible after their completion the patient whose case has been presented at length should be told the results of the conference with the utmost display of tact, kindness, and diplomacy.

Psychological Medicine in General Practice. British Medical Journal, pp. 585–90 (Sept. 6), 1958.

A working party of the Council of the College of General Practitioners (Great Britain) was appointed to study psychological medicine in general practice, upon a request from the Ministry of Health for the views of the College on this subject. The study group accepted as a definition of *psychology:* "The science which deals with the mind and mental processes;" and of *psychiatry:* "The recognition and treatment of diseases of the mind." This article—the report prepared by the working party, which has now been submitted to the Ministry's Standing Advisory Committee on Mental Health—discusses the importance of psychological medicine in general practice; the types of psychological illness seen in general practice (a range of psychological problems which confront family doctors have been listed, in spite of the difficulties due to the lack of a common classification); the leading part which should be played by all family doctors in this work; and the undergraduate and postgraduate instruction this requires. The working committee, in summarizing their review of psychological medicine in general practice, states how much it has been impressed by the importance and size of the problem. They suggest that this subject should be taught more thoroughly to all medical students and that more opportunities for postgraduate training should be open to all general practitioners. They found that a great deal of the family doctor's work is taken up by psychological disorders, many of them on the fringe of normality. They point out how well he is placed for their prevention, diagnosis, and management, either working alone or cooperating in a team with his many potential helpers from the social services. Among the six main recommendations made to the Ministry of Health in this report, the following are of general interest: (1) In the undergraduate medical curriculum greater emphasis should be placed on normal psychology and psychological medicine; (2) in qualifying examinations there should more often be a compulsory written question on the psychological aspects of medicine; (3) more postgraduate training of general practitioners should be arranged in all areas; and (4) in helping their patients with psychological illnesses, more opportunities should be taken by family doctors to develop team-work with the available social services. Concluding, the committee expresses the belief that "with increasing understanding by all general practitioners, and by the public, of the significance of anxiety and stress in health and disease, and with advances in knowledge and skill of succeeding generations of family doctors, the average standard of work in this field should be very much higher in twenty years' time than it is to-day."

A Report on the Establishment of a Second Medical School in New South Wales. The Medical Journal of Australia, pp. 19–20 (July 5), 1958.

An Advisory Medical Committee was appointed by the New South Wales Minister for Health in December, 1957, to report on the establishment of a second medical school in N.S.W. The Committee was asked to consider and make recommendations relating to the following matters: (*a*) the order and nature of those measures which are essential to the establishment of the proposed medical school; (*b*) the composition of its curriculum on all levels. (*c*) any other matters relating to the standard of medical education in N.S.W. In this same issue of the *Medical Journal of Australia* (pp. 24–25) can be found the Committee's own summary of its recommendations. This paper is a critical comment on the said recommendations, which are considered "controversial, to say the least." Those relating to the shortening of the medical course; the introduction of an extra period of training for the Honors degree and that of bachelor of surgery, and certain aspects of postgraduate training are regarded as especially "provocative." General agreement seems to be given to the recommendation to restrict the number of students in accordance with available staff and facilities. The report on the whole is called "disturbing," and its most patent fault is thought to be found in its too hasty compilation.

The Student and the Clinical Curriculum. Edward J. R. Rossiter. British Medical Journal, pp. 608–10 (Sept. 6), 1958.

In 1956 and 1957 the British Medical Students' Association conducted inquiries into the preclinical curriculum. This year a survey of the clinical curriculum has been started, the first part of which was designed to produce a broad outline of teaching methods throughout the country and to find out what students think of them. Many questions may arise from this inquest, but two main questions stand out, namely: (1) What is the student's place in the clinical curriculum? (2) Can students make a useful contribution to medical education? The author of this paper (a clinical student at West London Hospital Medical School and an Education Officer of the British Medical Students' Association) attempts to find the answers. Before entering into a detailed discussion he points out, however, that 100 years ago these problems did not exist. The student's place was then a clear-cut one: he spent most of his time learning directly from his teachers and the rest in reading his books. This was a reasonable system at a time when the teachers could know most of their subject. Today no teacher can hope to understand more than a small portion of Medicine as a whole, and a textbook is often out of date by the time it is published. The medical student of today should have a greater part in organizing the curriculum, because he is closer to it in many ways than are his teachers and more painfully aware of the deficiencies of the teaching received. The author approaches the gist of the matter by examining first what he considers to be the primary function of the medical school and the part each teaching unit plays in the curriculum. He then returns to the question of what the student can do to help the medical school achieve its aims. Since the basis of a good school is good teaching, and since the one person really capable of assessing teachers is the student who is on the receiving end, it is suggested that each student should write a short report, anonymously, at the end of each term, on each of his teachers, and that those who are consistently evaluated adversely should be relieved of teaching duties. As to teaching methods, the author, discussing the role of the consultant and that of the registrar, the place of research in the curriculum, and the British system of examinations, points out some ways which he considers would lead to considerable improvements (among them are methods used in other countries, mainly in the U.S., such as the American system of examinations throughout the course or the experience offered to the American medical student by letting him take complete care of one family during his entire clinical course). In his conclusions, he expresses the strong belief that suggestions coming from clinical students may well be valuable contributions to medical education and should be stimulated. They are necessary, also, if one agrees that "transition from student to doctor should be almost imperceptible, not suddenly on obtaining some letters after one's name."

Undergraduate Education and the General Practitioner. Richard Scott. British Medical Journal, pp. 577–80 (Sept. 6), 1958.

In this paper, first of a series of three on the continuing education of the general practitioner, the author examines the suggestion made by the General Medical Council of his country that "it is desirable that the student should be given opportunities to learn something of the work of the general practitioner." Five questions are posed and their answers discussed: (1) Why is it

desirable that students should be introduced to general practice? (2) At what stage in the curriculum should this occur? (3) Where should it take place? (4) How should this introduction be carried out? (5) What should they be taught? After discussing briefly the evolution of Medicine in the past 100 years, specialization, Medicine and the Social Sciences, and Comprehensive Medical Care on a national basis—all factors which have a bearing on the "why" question—the answer to the first question can be resumed: "It is only in the setting of general practice . . . that the student can be given some insight into the wide range of clinical and social problems with which society confronts the medical profession." (2) At what point in the curriculum should this experience be offered? The author thinks there is much to be said for introducing the subject rather late into the curriculum. As to (3), where should this instruction be given? The obvious answer is in the practical day-to-day setting of general practice, and if we ask (4) how it should be taught? Dr. Scott thinks there is practically no educational method which cannot be applied, but considers among the most valuable that of attaching the student for a period of 2 weeks or more to a general practitioner. When answering the fifth question, it should be kept in mind that the chief claim of the Medical School is to provide basic training for all students and that it cannot be concerned primarily with training for any one of its branches, general practice included. It is the author's view that the most important things to be learned in general practice are the "intangibles," a philosophy or an attitude of mind. Therefore, while the student has much to learn of a practical nature "by studying the contents of the doctor's bag," with the limited time at his disposal he should be given above all the opportunity to gain an insight into the doctor's mind. What is most important for the student is "the practical demonstration of Medicine actually at work in open society."

Postgraduate Education for the General Practitioner. GEORGE SWIFT. British Medical Journal, pp. 580–83 (Sept. 6), 1958.

This article deals with the problems of the education of newly qualified doctors who wish to enter general practice, and of the continuing education of established general practitioners in Great Britain. There, the College of General Practitioners has come into existence largely to satisfy the need for a continuing education of the general practitioner. The institution has now more than 30 faculties in the United Kingdom and overseas, most of which correspond with the area served by a university with a medical school. Each faculty board has its own postgraduate education committee which tries to coordinate—and increase if necessary—the opportunities for postgraduate instruction of the members and associates of the College within its own area. In 1955, the Postgraduate Education Committee of Council of the College (of which the author is the Chairman) sent out a questionnaire to all members in order to obtain their views on all aspects of the postgraduate education of the general practitioner. The answers of 1,664 doctors have been analyzed (cf. *Research Newsletter*, **4**: 151, 242, 329, 1957), and the results are discussed throughout this paper. Special reference is made to the section of the questionnaire which deals with the training of young doctors for general practice, the need for which has been recognized by the British Government through the institution of the "trainee practitioner scheme," a system which is highly praised as well as severely criticized by trainers and trainees. Attention is also drawn to the efforts of the Midland Faculty of the College which has given careful consideration to the non-clinical subjects that should be included in a syllabus for the trainee (cf. *Outlines of General Practice*, Midland Fac., Col. of Gen. Pract., 1958). As to training methods, the author thinks—and his point of view seems to be generally accepted—that a trainee should not spend all of his year watching one doctor in his practice but that during that period he should visit several different types of general practices (in a rural, residential, industrial area, etc.). If he should find weaknesses—which almost inevitably will occur—in his professional knowledge after his year in general practice, a system for further hospital training in special subjects is suggested by means of a rotating internship. As to the continuing education of the already established general practitioner, any discussion tends to center in the subject of organized courses and the meetings of clinical societies. However, the author puts great stress on the possibilities of self-education, referring to the *Fourth Annual Report* (of the Royal College of General Pract., p. 36, 1956) which lists thirteen ways by which a general practitioner can keep up-to-date. Only one of these refers to organized courses and lectures, and it is suggested that the

first and most important method of self-education is to carry out good general practice. One further efficient method is the teaching of general practice to others. However, he still will need to attend courses and organized lectures. The College of General Practitioners believes that a family doctor should attend at least 20 hours of organized postgraduate study each year. In the questionnaire members of the College were asked what they considered to be the main obstacles to postgraduate work, and 75 per cent of those who answered thought it was lack of time. However, the author felt disturbed by the fact that 130 doctors confessed in their replies to a lack of practice in studying.

Keeping Informed by Tape and Disk. JOHN C. AND VALERIE GRAVES. British Medical Journal, pp. 583–85 (Sept. 6), 1958.

The idea of keeping general practitioners informed by tape and disc recordings arose from the analysis of a great number of replies to the questionnaire sent out in 1955 by the College of General Practitioners which stressed lack of time to attend organized courses and meetings as the general practitioner's foremost difficulty in continuing his education. Why not, it was asked, take courses and meetings to the general practitioner's home? And it was decided to make a trial record of recorded talks. Two trial recordings were made, the first consisting of a 15-minute introductory talk describing the experiment followed by a 15-minute talk on recent advances in virus diseases (likely to be thought "too technical" in print). The second recording, also 30 minutes long, was an informal talk by a general practitioner on psychiatry in general practice. The talks were first recorded on tape, from which soft discs were cut. Listeners were divided into four groups: one group of doctors with tape recorders, three groups of those with phonographs. General instructions and a description of the recording as well as a questionnaire for each set were included in the package. The carrying out of the experiment and its results are discussed in detail by the authors (both pertaining to the Medical Recording Service of the College of General Practitioners). In their conclusions, it is stated that a great deal has been learned from this one trial, mainly through the replies of the listeners. Referring to the technical aspects of the matter, it has been found that soft discs "are not equal to ordeal by G.P.O."; that very good quality of equipment is required if the recording is to be transferred from tape to disc, and that to sound right, a talk must be informal, unscripted, and almost "armchair" in quality. As to the general response to this short trial, the authors felt encouraged to believe that there is a real demand for recorded talks, and they invited any interested member of the College of General Practitioners to join in further experiments. The Medical Recording Service is now a regular service of the College to its members, well over hundred of whom are now receiving recordings regularly. Five talks have been completed, and many others are in the making. About half are by consultants and half by general practitioners with a special interest or experience. Available on request to members are also a number of recordings which will form the nucleus of a library. These include recordings of notable College occasions (such as the James Mackenzie Lecture) and more detailed talks on subjects (e.g., more advanced psychiatry) which may not appeal to all. A new feature of the service, still in an experimental stage, is the Discussion Tape, which allows each listener 5 minutes of tape to record his own comments, ask questions, and air his views after hearing the lecture. In some cases the original lecturer will answer the questions and round off the discussion before the completed tape goes out again.

NEW BOOKS

KENNETH E. PENROD
Book Review Editor

Abstracts

Chambers' Technical Dictionary. Edited by C. F. TWENEY and L. E. C. HUGHES. 3d ed. Revised, with supplement. New York: Macmillan Company, 1958. $7.50.

The aim of this dictionary is to give, in light of present knowledge and opinion, definitions of terms that are of importance in pure and applied science, in all branches of engineering and construction, and in the larger manufacturing industries and skilled trades. It is a dictionary of technical terms, written by specialists, partly for other specialists but more particularly for the technically minded man-in-the-street, and for students and interested workers of all kinds or ages. Indeed, it is written for all who wish to understand what scientists and engineers have to say to each other. This work was first published in July, 1940, and has undergone a number of revisions since that time. It includes some 60,000 terms from 120 branches of scientific and industrial activity.

Tumors and Tumorous Conditions of the Bones and Joints. By HENRY L. JAFFE. Philadelphia: Lea & Febiger, 1958. 618 pp. 701 illustrations. $18.50.

This book is intended to present an integrated account of the tumors and tumorous conditions affecting the bones and joints. The clinical, roentgenographic, and pathologic findings pertaining to the various lesions are discussed and correlated. Facts about the clinical findings are given with attention to their value in narrowing down diagnostic possibilities. This book is directed primarily toward diognosis, but in regard to treatment attention is devoted mainly to the choice of procedure appropriate for each condition. The illustrations have been arranged on full-page plates to permit the simultaneous display of a number of pictures for purposes of comparison. The accompanying legends give details about each illustration, and many of them embody sufficient information to constitute case histories. Indeed, through integration with the text, the illustrations and their legends compose in themselves something like an atlas of the skeletal tumors. This book should be useful to pathologists, radiologists, and orthopedic surgeons, as well as of interest to other colleagues who are confronted from time to time by problems related to skeletal tumors.

Urology in General Practice. By FRANK COLEMAN HAMM and SIDNEY R. WEINBERG. Philadelphia: J. B. Lippincott Co., 1958. 287 pp. $6.00.

The aim of this book is to introduce the medical student and the resident physician to the field of urology and to provide a ready reference for those in other branches of medicine and surgery. The authors have tried to consider the problems encountered in this field against the larger spectrum of general practice. Many of these disorders are included in the group of typical degenerative diseases. It is believed a good working knowledge of urologic principles is essential for those doing general medicine. Abdominal surgery, gynecology, and obstetrics as a differential diagnosis of abdominal conditions are closely interrelated. The principles of management herein elaborated are those generally accepted, and little controversial material has been included. Bibliographic references are supplied for those wishing further information.

Autopsy Diagnosis and Technique. By OTTO SAPHIR. 4th ed. New York: Paul B. Hoeber, Inc., 1958. 512 pp. $8.50.

Since the completion of the 1st edition of this book in 1937, its scope has been considerably enlarged and new material added. Although the author still feels the ideal dissection method employs removal of organs en masse or in systems, a modified Virchow's method for removal and dissection of individual organs has been presented because of many requests. The discussion

of diseases of the breast has been greatly expanded. In this edition the chapter dealing with unexpected death and legal examinations has been considerably enlarged, and the scope of the discussion of congenital anomalies of the heart has been broadened. A more comprehensive study is also made in the field of bone and joint diseases. There are three entirely new chapters: a short history of autopsy, a chapter dealing with autopsies performed on bodies of patients who have been treated with radioactive isotopes, and a new chapter dealing with removal and storage of the cornea, blood vessels, bone, cartilage, and skin grafts. In short, there is much new and revised material in this 4th edition.

Radioactive Isotopes in Clinical Practice. By EDITH H. QUIMBY, SERGEI FEITELBERG, and SOLOMON SILVER. Philadelphia: Lea & Febiger, 1958. 418 pp., 97 illustrations. $10.00.

This book is the outgrowth of the experience of the authors in lectures, laboratory exercises, and conferences with the approximately 225 students who have completed their course, offered eight different times since June of 1954. The book has been written as three quite separate parts, each by the author who had most to do with that field in teaching, with some collaboration of authors. No claim is made for completeness, and a considerable amount of supplementary reading will be necessary for anyone who wants a really comprehensive survey. References have been supplied for this purpose, but no effort has been made to assemble a complete bibliography.

Mechanisms, Diagnosis and Management of Head Injuries. By E. S. GURDJIAN and J. E. WEBSTER. Boston: Little, Brown & Co., 1958. 465 pp. $14.00.

This volume reflects the experience of the authors—clinical, neurosurgical, and experimental, civilian and military—with head injuries. Data of 25 years have been reviewed, involving 1285 cases of head injuries, treated at the Detroit Receiving Hospital between January 1952 and July 1954. Some experimental and clinical material has been correlated and summarized in order to provide a better basis for discussing the many problems presented by head injuries. Statistical tabulations and reports, however, have been drastically curtailed. In addition to mechanisms, diagnosis, and treatment, the book considers the complications and sequelae of these injuries, and special aspects in relation to infants and children and to sports. The medico-legal aspects of head injury are discussed, as well as the historical background, although space considerations again have prevented including all that might be considered important contributions from the literature. Many illustrations are included.

Pictorial Handbook of Fracture Treatment. By EDWARD L. COMPERE, SAM W. BANKS, and CLINTON L. COMPERE. 4th ed. Chicago: The Yearbook Publishers, Inc., 1958. 435 pp. $7.50.

This 4th edition contains many changes in text, modification of several drawings, and the addition of many new illustrations. Descriptions of several new techniques have been added, such as the use of a small threaded wire through the first metacarpal bone for skeletal traction to reduce and maintain position of comminuted fractures of the distal end of the radius. Also described are the complications of, and recommended methods of treatment for, aseptic necrosis of the femoral head and the carpal navicular and the treatment of non-unions and malunions. No attempt has been made to describe all methods of treatment. Chapters dealing with fracture healing, aseptic necrosis of bone, and fractures of the spine have been rewritten. Many of the diagrammatic illustrations have been redrawn, and several new drawings have been added. Additional roentgenograms and photographs which help to explain problems of treatment will be found in each of the several chapters. The new edition is offered in the hope that it will continue to be of assistance to medical students and to the physician in general practice who wishes to provide for his patients who have suffered fractures or dislocation injuries, the very best orthopedic care.

The Management of Emergencies in Thoracic Surgery. By JOHN BORRIE. New York: Appleton-Century-Crofts, Inc., 1958. 330 pp.

The aim of this book is to present those thoracic lesions which are essentially surgical emergencies and to describe their pathologic nature, their clinical features, and their management. Much of what has been written on thoracic emergencies is scattered widely throughout the literature, and this is an effort to bring these

data together. Since all thoracic surgical procedures can also have post-operative complications, which are themselves real emergencies, these too are briefly described. This book will help general practitioners, house staff, and consultants appreciate the emergencies of a new specialty from the surgeon's viewpoint. They usually see the patient before the surgeon is called and should be aware of what surgery can offer. In addition this book will introduce medical students to lesions which they will meet, often unexpectedly, throughout their professional lives and which they might otherwise find baffling.

Basic Clinical Parasitology. By DAVID L. BELDING. New York: Appleton-Century-Crofts, Inc., 1958. 441 pp.

This book is designed primarily for the medical student and busy physician. Biologists will find it useful and of great value. This condensed volume strikes a happy medium between the brief presentations of the small textbooks of parasitology and the lengthy detailed ones of the large, by furnishing the student with the essential information concerning the common parasites of man. Pertinent material has been highly selected, featuring the common cosmopolitan parasites, with brief treatment of the rare or minor species. The needs of medicine have dictated the selection of subject matter and emphasis. In the interest of brevity, charts and tables have frequently been used. For the convenience of students and for conciseness, the pathology and symptomatology of the parasitic diseases have been correlated in tables. Treatments of various diseases have been considered briefly in a single chapter in which diseases requiring similar treatment are grouped and only established methods of treatment and chemotherapeutic agents of proved value are presented. In the chapter on diagnostic methods only those technical methods that are commonly used by students or laboratory technicians are given, but detailed references to the literature are furnished for special methods. Special attention has been given to the important recent developments of malaria, toxoplasmosis, and schistosomiasis.

Rehabilitation Medicine. By HOWARD A. RUSK and 36 collaborators. St. Louis: The C. V. Mosby Co., 1958. 552 pp. $12.00.

This book is written as a textbook on physical medicine and rehabilitation. It is also hoped that it will prove to be a very useful reference for all physicians, whether they be in general practice or specializing in rehabilitation and physical medicine. Experience has shown that a majority of the medical rehabilitation procedures can and should be done by the practitioner or specialist responsible for the patient's primary medical care and that such procedures should be an integral part of such medical care. This is the underlying philosophy of this book. The primary aim of this book is to provide the necessary training in the specialized skills and techniques of rehabilitation for that physician interested in understanding and caring for the disabled person.

The Guinea Pig in Research. By MARY ELIZABETH REID. Washington: Human Factors Research Bureau, Inc., 1958. 70 pp. $2.00.

This booklet (Publication No. 557) describes the known dietary needs of the guinea pig in quantitative terms, together with a brief account of some aspects of its physiology which may be of interest to the nutritionist and may increase its usefulness in medical research.

Radiology for Medical Students. By FRED JENNER HODGES, ISADORE LAMPE, and JOHN FLOYD HOLT. 3d ed. Chicago: The Yearbook Publishers, Inc., 1958. 433 pp. $8.50.

Extensive revision without expansion has taken place in the 3d edition of this work. The original aim of presenting no more material than that which can be considered necessary to sound undergraduate teaching of the subject has been preserved. To make room for new material the description of x-ray record-keeping and diagnostic cataloguing has been deleted. In the field of pediatric radiology, infantile cortical hyperostosis, infantile skeletal trauma and hypervitaminosis have been accorded proper attention. The radiologic features of osteomyelitis, syphilis, rickets, and scurvy have been reappraised in the light of their great historical importance. Public concern over the biological hazards of exposure to radiation of all sorts has led to expansion of the material bearing on this subject. A chapter dealing specifically with the rapidly expanding subject of cardiovascular radiology has been added. The revised text of the section of therapeutic radiology reflects the declining use of radiation methods in the treat-

ment of nonmalignant lesions. New material has been added concerning the employment of cobalt-60 as a source of high energy gamma radiation. As with previous editions, this book is aimed at, written especially for, and dedicated to the undergraduate student of medicine.

A Stereoscopic Atlas of Human Anatomy. By DAVID L. BASSETT. Portland, Oregon: Sawyer's, Inc., 1958.

Since the preparation of this atlas is an undertaking of considerable magnitude, and obviously cannot be completed in a short time, it has seemed advisable to publish the several sections of the work as they are finished. Section IV dealing with the thorax is now available. The atlas is organized by regions of the body, and the structures, insofar as they can be explored by dissection, are presented in stereoscopic Kodachrome photographs.

Public Health and Welfare: The Citizen's Responsibility—Selected Papers of Homer Folks. Edited by SAVEL ZIMAND. New York: The Macmillan Co., 1958. 464 pp. $7.00.

The 49 selections of this volume, representative of Mr. Folks' major interest in social work and public health, are arranged chronologically, starting with his first address before the National Conference, in 1891, and closing with his last major talk, in 1946. Mention is made at the beginning of each paper of the group before which it was presented or the journal in which it was published. It was published for two important and specific reasons: first, the papers of Homer Folks provide and will continue to provide valuable historical background relating to future progress in human welfare; and, second, the volume implicitly constitutes a tribute to Mr. Folks from the organization that he so magnificently led for more than a half century.

Chemistry for Medical Technologists. By CHARLES E. SEIVERD. St. Louis: C. V. Mosby Co., 1958. 408 pp. $10.75.

The purpose of this book is to present those aspects of chemistry which are significant to the medical technologists. The material falls into five sections: Essentials of Elementary Chemistry, Urine Analysis, Blood Analysis, Spinal Fluid Analysis, and Gastric and Duodenal Analysis. The material covered meets the curriculum requirements of the National Registry Examinations. The more popular methods of analysis are used throughout the text.

Research Advances Applied to Medical Practice, III: The Lipoproteins, Methods and Clinical Significance. Edited by F. HOMBURGER and P. BERNFELD. Cambridge, Mass.: Bio-Research Institute, Inc., 1958. 94 pp.

These symposia, of which this is the third in the series, are intended to bridge the gap between medical science and medical practice. In the present volume, it is hoped that the vast amount of knowledge and accumulative scientific data pertaining to the lipoproteins can be made understandable by and available to practitioners of medicine. Seven other senior authors have contributed to the contents of this volume, in addition to the editors.

Books Received

Schizophrenia. By MANFRED SAKEL. New York: Philosophical Library, 1958. 334 pp. $5.00.

The Johns Hopkins Hospital and the Johns Hopkins University School of Medicine—A Chronicle. Volume II, 1893–1905. By ALAN M. CHESNEY. Baltimore: The Johns Hopkins Press, 1958. 486 pp. $6.00.

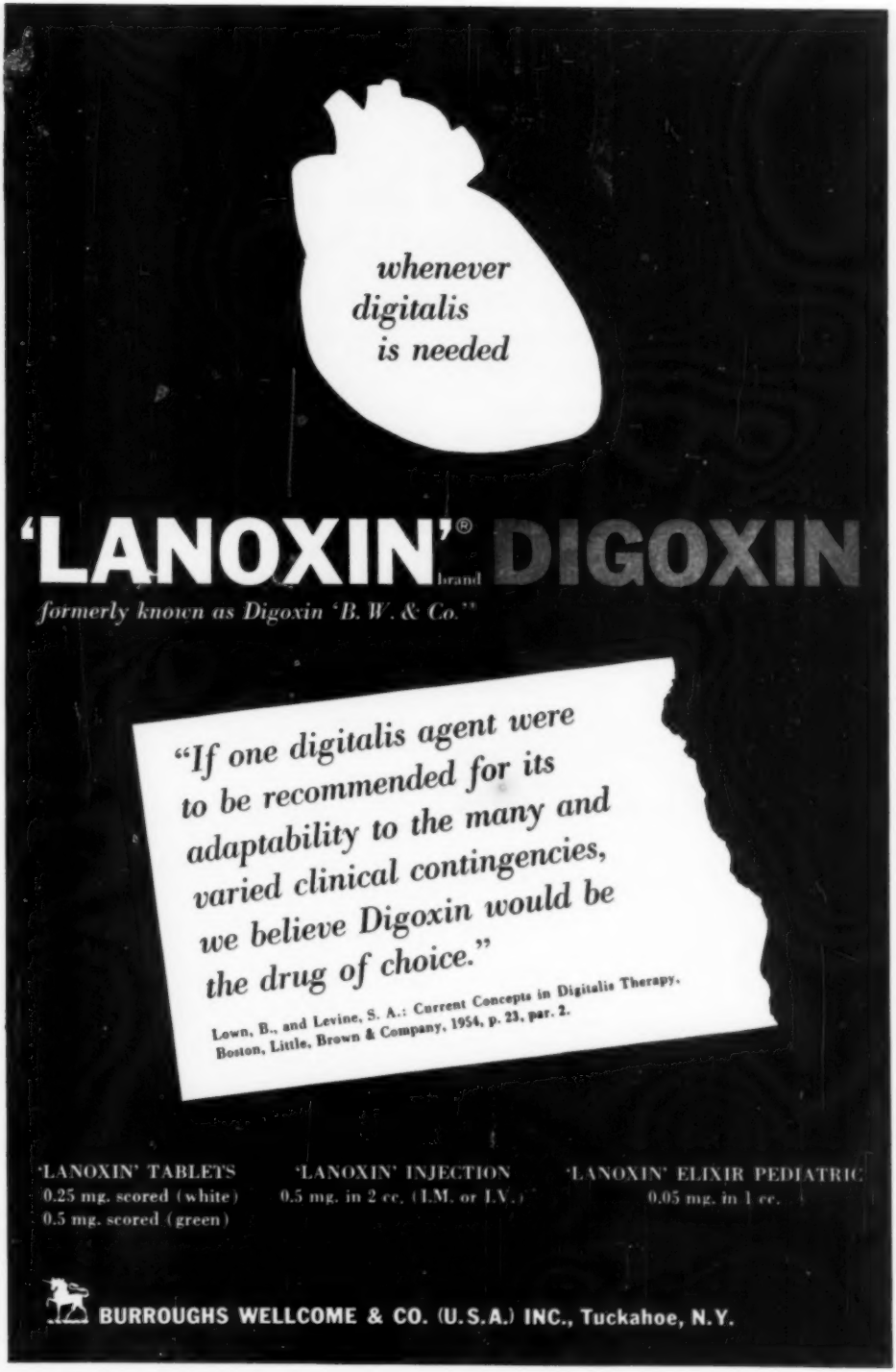
Interdisciplinary Team Research—Methods and Problems. By MARGARET BARRON LUSZKI. New York University Press, 1958. 304 pp. $6.00.

Physiology of Prematurity. Trans. 2d Josiah Macy, Jr., Conference, March 25, 26, and 27, 1957. Edited by JONATHAN T. LANNAN. New York: Josiah Macy, Jr., Found., 1958. 150 pp. $3.75.

Hodgkin's Disease. Edited by ANTONIO ROTTINO with 33 collaborators. New York: New York Academy of Sciences, Ann., **73**: 1–380, 1958.

Surgical Convalescence. Edited by F. CURTIS DOHAN with 20 collaborators. New York: New York Academy of Sciences, Ann., **73**: 381–538, 1958.

Report of the United Nations Scientific Committee on the Effects of Atomic Radiation. New York: Columbia University Press, 1958. 228 pp. $2.50.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NEWS FROM THE MEDICAL SCHOOLS

Bowman Gray

Plans to construct a vivarium wing of the school's new research building will be realized by a supplementary grant of $142,638 from the Public Health Service. The award brought total government contributions for the new building to $895,332. Total cost of the new facilities will be approximately $2 million and will more than double the physical size of the school. Approximately 60 per cent of the new space will be devoted to research.

U. of Chicago

Work is expected to start in January on a diagnostic center for the University of Chicago clinics. The estimated cost is $1,300,000 of which about one-third has been pledged. The two-story building will link Chicago Lying-In hospital and Billings hospital. These institutions are part of the university clinics and the new facilities for patient care will serve as a central admission point for clinics. The diagnostic building will cost $850,000 and the remainder of the $1,300,000 will be spent for structural alterations of the adjacent hospitals.

Colorado

A 200-bed Civil Defense Emergency hospital was delivered recently to the Medical Center from the federal government to expand facilities in the event of a civilian disaster. The unit will be stored at the Center and will be used to familiarize medical, nursing and other personnel with its use. In the event of disaster, the emergency hospital will be set up and used on a temporary basis to treat the over-flow of patients from Colorado General.

Columbia

A member of the faculty will go to the University of Turku, Turku, Finland, where he will lecture on anesthesiology. Dr. B. RAYMOND FINK, assistant professor of anesthesiology, is the recipient of a Fulbright grant which will take him to Finland for the remainder of the 1958–59 academic year.

Dr. H. HOUSTON MERRITT, Acting Dean and Acting Vice President in Charge of Medical Affairs, was elected a Vice President of United Cerebral Palsy Associations Inc. at the organization's ninth annual conference held November 14, in New York City. Active in United Cerebral Palsy for several years, he is chairman of the UCP Research and Scientific Committee, and is a member and former chairman of the Medical Advisory Committee.

Georgetown

L. DALLAS UHRIG has been appointed administrative assistant to the dean. Mr. Uhrig will work with various faculty committees, and will handle the production of an information bulletin for the medical school.

Hahnemann

A comprehensive Symposium on Hypertension was held recently at Town Hall, marking the first survey of the subject since that held in Minnesota eight years ago.The 63 participants were drawn from all parts of the country and abroad. Dr. WILLIAM A. SODEMAN, dean of Jefferson Medical College, was among the participants.

Harvard

Pschyoanalysts and psychiatrists from all parts of the United States joined in cele-

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brating the 25th anniversary of the founding of the Boston Psychoanalytic Society and Institute, November 30. Speakers included Dr. KARL MENNINGER, director of the Menninger Foundation; Dr. BERTRAM LEWIN, director of the Survey of Psychoanalytic Education of the American Psychoanalytic Society; Dr. IVES HENDRICK, clinical professor of psychiatry at Harvard and chief of the Harvard Teaching Unit, Massachusetts Mental Health Center. Dr. M. RALPH KAUFMAN, founder of the Psychiatric Clinic at Beth Israel Hospital and Director of Psychiatry, presided.

Illinois

Dr. MARVIN J. COLBERT, assistant professor of medicine, has been appointed director of the Health Service, succeeding Dr. BUFORD HALL, who has served on a half-time basis since last January. Dr. Colbert joined the faculty as instructor in medicine in July 1956, and was promoted to assistant professor in September 1957, a rank he will continue to hold.

Funds for examination of its teaching program have been given the college of medicine in the form of a grant of $112,000 from the Commonwealth Fund. The two-year pilot study is expected to result in a permanent center for educational research and will probe such areas as the instructional program, training of medical personnel in addition to physicians, working relationships with other institutions in the Medical Center, and linking the medical program with other university departments in Urbana and Chicago.

Meharry

During the recent meeting of the American College of Surgeons in Chicago, a club was formed in honor of Dr. MATTHEW WALKER, chairman of the department of surgery. To be known as the "Walker Surgical Club," the organization is composed of surgeons who have received surgery training under Dr. Walker. There are presently 50 members in the club. The club will meet once yearly during the meeting of the American College of Surgeons and has as its purpose the furtherance of the surgical program at Meharry.

Michigan

More than 50 medical directors representing some of the largest corporations in the United States and Canada, met at the University of Michigan Medical Center, December 5–6 to discuss current health problems of the nations' working force. Titled the "Selby Discussional" in honor of the former medical director of the General Motors Corporation, the annual event is now in its 10th year. It is conducted by the U-M Institute of Industrial Health.

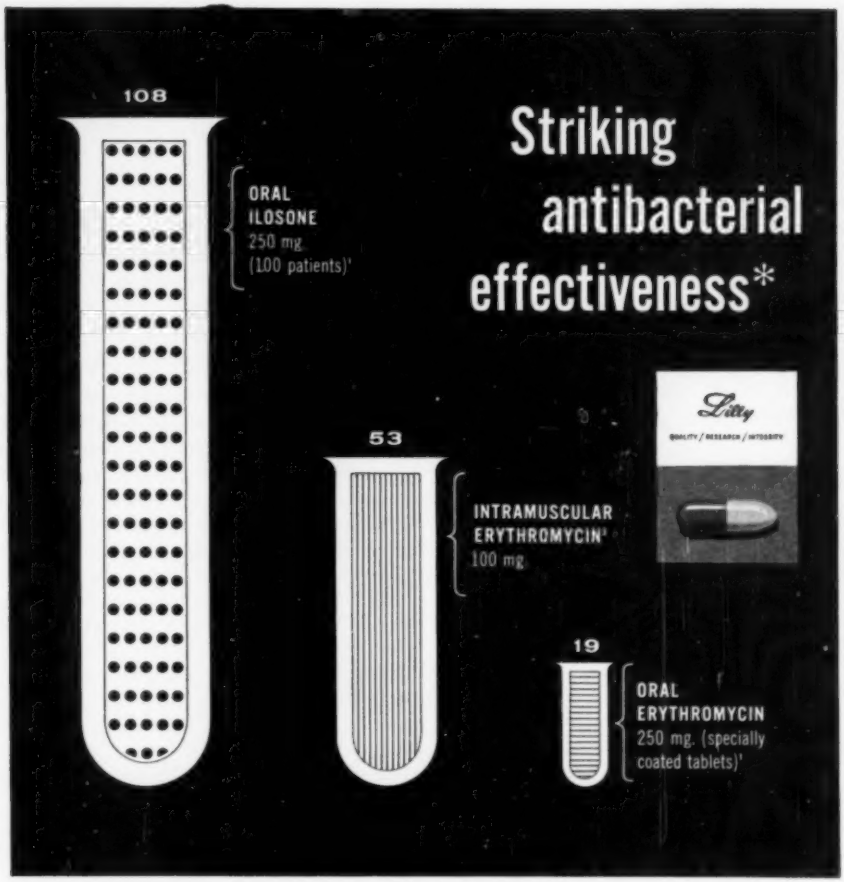
A powerful new charge of radioactive cobalt was loaded into the "Theratron" at the Medical Center in December, replacing the original source which has been in constant use for the past four years. Used extensively in the treatment of cancer, it contains 2,000 curies of radioactivity, equivalent in power to $75 million worth of radium.

Minnesota

The school announced that their medical courses to be presented at the Center for Continuation Study will be conducted January 22–April 3. Topics include: Surgery for Surgeons; Cardiovascular Diseases for General Physicians; Pediatrics for General Physicians; Trauma for General Physicians; Internal Medicine for Internists; and Basic Concepts of Water and Electrolyte Balance for General Physicians. Further information may be obtained by writing to the Director, Department of Continuation Medical Education, 1342 Mayo Memorial, University of Minnesota, Minneapolis 14.

New York University

A step toward the prevention and complete cure of rheumatic fever took place recently when Irvington House and New York University signed a joint agreement to establish the Irvington House Institute for Rheumatic Fever and Allied Diseases as a part of NYU-Bellevue Medical Center, according to university sources. The Institute will be



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1. Griffith, R. S., *et al.*: Antibiotic Med. & Clin. Therapy, *5*:609 (October), 1958. Note: Peak levels with the oral erythromycin tablets (thirty-three dilutions) were not observed until four hours after administration. 2. Data from Griffith, R. S.: Antibiotics Annual, p. 269, 1954-1955.

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housed in the new University hospital. Irvington House will underwrite the cost of $500,000 toward construction of the treatment, research and clinical facilities. The university and Irvington House, while joining in the creation and operation of the Institute, will continue to function as autonomous, financially independent institutions.

North Carolina

The private medical library of the late Dr. J. C. PASS FEARRINGTON of Winston-Salem, has been donated to the Division of Health Affairs library. The collection of books and journals numbers some 3,000 volumes and is valued at an estimated $28,000.

Two faculty members have been named officers of the Society of North Carolina Bacteriologists. Dr. D. A. MACPHERSON, professor and head of the department of bacteriology, was named president of the organization. Dr. JAMES D. THAYER, assistant professor of experimental medicine, was named counselor.

North Dakota

Celebrating its 75th anniversary this year, the university awarded 14 honorary doctor's degrees at a special convocation recently. Thirteen of the degrees were presented to UND alumni who have achieved distinction for outstanding accomplishments in their specific academic fields. Dr. CUSHMAN DAVIS HAAGENSON, a 1921 graduate and professor of clinical surgery at Columbia University's College of Physicians and Surgeons, was awarded the Doctor of Science degree.

Northwestern

Two professorships in nutrition and metabolism, the first to be endowed specifically in this field have been established at the medical school. Each chair is endowed for a half million dollars.

The university named the first chair the Tom D. Spies Professor of Nutrition and Metabolism. It will be awarded to Dr. ROBERT E. STONE, now professor of nutrition and metabolism. The second professorship, as yet unnamed, will be held by Dr. Spies.

Announcement of the academic chairs in nutrition and metabolism had been originally planned as a part of the Third International Conference on Nutrition and Metabolism scheduled for December 10. The conference was cancelled because of the illness of Dr. Spies, who was to serve as conference coordinator.

Pennsylvania

The School of Allied Medical Professions formally dedicated its new quarters at ceremonies held November 25. Basil O'Connor, president of the National Foundation, was guest speaker at the dedication banquet.

Formerly a convent, the building was acquired by the university in 1957. The spacious old building makes it possible for the various academic programs of the school to be housed under one roof. Those participating in the ceremonies were Dr. OTIS ANDERSON, assistant surgeon general of the Public Health Service; Dr. GAYLORD P. HARNWELL, president of the university; Dr. WESLEY G. HUTCHINSON, dean of the School of Allied Medical Professions; Dr. I. S. RAVDIN, vice president of the university for medical development, and Mr. O'Connor.

Ground breaking ceremonies for the new $1,400,000 residence for student nurses of the hospital of the University of Pennsylvania were held on the campus, November 25. Mr. Orville H. Bullitt, president of the Board of Managers and a trustee of the university, introduced the hospital's newly appointed director of nursing, Miss MILDRED MCFERREN. Assuming her new duties January 19, Miss McFerren will be in charge of all nursing activities, including the nursing education program and nursing services.

The University of Heidelberg, Germany, one of the oldest medical schools in the world, honored an alumnus and former faculty member by conferring the degree of Honorary Medical Doctor on Dr. PAUL GYORGY. Dr. Gyorgy is professor of pediatrics at the University of Pennsylvania

Announcing . . .

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1959

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New and Nonofficial Drugs, an annual publication of the Council on Drugs of the American Medical Association, contains descriptions of drugs evaluated on the basis of available scientific data and reports of investigations. It deals with agents proposed for use in or on the human body for the diagnosis, prevention and treatment of disease. Descriptions of drugs are presented under nonproprietary names in the form of monographs designed to provide the following information: chemical or biologic identity, including pertinent properties; actions and uses, including associated side effects, toxicity and precautions; dosage, including routes of administration. Available preparations, including sizes or strength, and applicable commercial names are listed after each monograph as an aid to prescribing and identifying drugs.

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AMERICAN DRUG INDEX

1959

By Charles O. Wilson, Ph.D., Professor of Pharmaceutical Chemistry, College of Pharmacy, University of Texas, and Tony Everett Jones, Ph.D., Assistant Professor of Pharmaceutical Chemistry, College of Pharmacy, University of Colorado.

The ***American Drug Index*** identifies and correlates the many pharmaceuticals and medicinals available to the medical and allied professions. Ingeniously indexed and cross indexed for convenience to its user, this book provides factual data on over 15,000 preparations. Drugs are listed by generic name, trade name and pharmacologic grouping. Cross-indexing permits the finding of drugs or drug combinations even if only one major ingredient is known. Name, manufacturer, composition, synonyms (where they exist), sizes or strength, usual dose and use are given under each drug.

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School of Medicine and chief of the pediatric service of the Philadelphia General Hospital. He is credited with the discovery of riboflavin, vitamin B6 and is also the discoverer of a new microbiological growth factor for which human colostrum and milk is the best starting material.

Rochester

Construction has begun on a $400,000 Radiation Therapy Center for Strong Memorial Hospital, thus providing Rochester and western New York with facilities for the diagnosis and treatment of cancer and other diseases. The John Hartford Foundation has made a grant of $203,200 for the purchase of equipment and payment of part of the estimated $150,000 annual operating costs of the Center for three years, with the university providing the new building and paying the balance of the operating expenses. Under the direction of Dr. PHILIP RUBIN, the Radiation Therapy Center's functions will combine treatment, research, radioactive isotope diagnostic services, and teaching. The new super-voltage machines will enable the UR-Medical Center to take part in a national cooperative clinical evaluation program.

Saint Louis

A mental retardation program at Cardinal Glennon Memorial Hospital for Children will be established with a grant of a quarter of a million dollars from the Children's Bureau of HEW of the Public Health Service. The grant is for a five-year period with allotments of $50,000 annually. Under the direction of Dr. JAMES P. KING, head of the department of pediatrics and chief-of-staff, Cardinal Glennon Memorial Hospital, the program will be closely correlated with the Bureau of Maternal and Child Health of the Missouri Division of Health. Faculty members of the school and staff members of the hospital will be available as consultants in cases where medical specialists are required, Dr. King said.

Southern California

Construction of the second and third buildings of the University of Southern California Medical Center has started according to university officials. The more than $3 million project includes a six-story medical research building, a two-story instructional building, and the control center wing connecting the two. To be known as the Seeley Wintersmith Mudd Memorial Laboratory of the Medical Sciences, the research structure is being built with funds provided by his son, Dr. SEELEY GREENLEAF MUDD, vice chairman of the board of trustees of the university and former dean of the SC School of Medicine, and by the Public Health Service.

Stritch (Loyola Univ.)

Dr. WARREN W. FUREY, Clinical professor of radiology, died November 20, while attending the annual meeting of the Radiological Society of North America, of which he was a past president. Dr. Furey was a past president of the Chicago Medical Society and board trustee member of the American Medical Association. In 1955 he was given Loyola's alumni medal and received a citation from Northwestern University in 1956. He was also chief radiologist at Mercy and Little Company of Mary hospitals, and radiological consultant at Lewis Memorial Maternity hospital.

Stanford

Dr. ALAN K. DONE, former assistant professor of pediatrics at the University of Utah, has joined Stanford's faculty as assistant professor of pediatrics. Dr. Done was also former director of the Poison Information and Therapy Center at the Salt Lake County General Hospital, Salt Lake City.

Dr. DAVID A. RYTAND has been named the first Bloomfield Professor of Medicine. The appointment was revealed at a reunion luncheon for medical alumni marking the school's 100th anniversary. The professorship honors Dr. ARTHUR L. BLOOMFIELD, emeritus professor of medicine, who retired in 1954.

New and recent books and editions . . .

Adams: PHYSICAL DIAGNOSIS, 14th ed.

New edition of a famous text (Formerly *Cabot & Adams*). Shows how the patient should be examined, describes normal findings, and explains and interprets the important symptoms and signs created by injury or disease. 850 pp., 428 figs. $12.00

Beck & Rosenthal: OBSTETRICAL PRACTICE, 7th ed.

Heavily revised and rewritten edition of a work which the *American Journal of Surgery* called "one of the best if not the most satisfactory work of the present era." 1127 pp., 956 figs. $14.00

Brewer: TEXTBOOK IN GYNECOLOGY, 2nd ed.

"...embodies the best in the first edition with up-to-the-minute revision and additional material of great practical value and importance. . . . This is a textbook which should be required reading for all students of gynecology."—*Surg., Gynec. & Obstet.* 768 pp., 204 figs. $15.00

Cobb: FOUNDATIONS OF NEUROPSYCHIATRY, 6th ed.

". . . a classic of psychiatric literature . . . gives to practitioners and medical students the facts and correlations needed to understand the simpler workings of the central nervous system." —*New York Physician.* 324 pp., 16 figs. $5.00

Greenfield et al.: NEUROPATHOLOGY

". . . promises to remain the standard work of reference for many years to come. . . . All aspects of the pathology of nervous and mental diseases are included, with the exception of tumors." —*Lancet.* 644 pp., 400 figs. $20.00

Hardy: PATHOPHYSIOLOGY IN SURGERY

The essentials of this important subject written for the general surgeon. Carefully written in a graphic, memorable style, with excellent diagrams and case histories to fix the lessons in mind. 680 pp., 277 figs. $19.00

Miller et al.: HUMAN PARTURITION—*Normal and Abnormal Labor*

A concise delineation of basic factors and mechanisms involved in human parturition. A convenient guide for practitioners attending women in labor. 258 pp., 67 figs. $7.50

Walshe: DISEASES OF THE NERVOUS SYSTEM, 9th ed.

A clear, concise introduction to neurology for the medical student. Nothing of importance is omitted and the presentation is well balanced and easily readable. 390 pp., 89 figs. $8.00

Brand new edition!

Bell, Davidson & Scarborough: TEXTBOOK OF PHYSIOLOGY AND BIOCHEMISTRY, 4th ed.

An introduction to the study of physiology and biochemistry for students of medicine, the allied sciences, and pure science. 1076 pp. 825 figs. $12.50

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A member of the faculty since 1936, Dr. Rytand is editor of the *Annual Review of Medicine* and a member of the editorial board of the *Journal of Chronic Diseases.*

Temple

The Puerto Rico chapter of the Temple University Medical Alumni Association will be host at a Postgraduate Medical Seminar to be held next March in Puerto Rico. Under the direction of Dr. GEORGE E. MARK, JR., the project will include a scientific program covering practical material for those in general practice. The lecturers will be divided between Temple University Medical Center faculty and Puerto Rico Medical School faculty. Highlights of the week will include a trip to the Virgin Islands, and a tour of San Juan.

University of Washington

Governor Albert D. Rosselini will be principal speaker when the new 300-bed University of Washington Teaching Hospital is dedicated Saturday, April 18. Especially designed for teaching and research, the new hospital will be a training center for 18 health professions, and a hub of basic and applied research. Adjacent to the Health Sciences building, the hospital has been built in two stages. Unit I, housing offices and laboratories for departments concerned with patient care, was completed in 1954. Unit II, now under construction, contains central service and diagnostic facilities, an outpatient clinic and beds for 300 inpatients.

Four members of the staff have recently been appointed to advisory committees of the National Institutes of Health. Dr. STANLEY H. BENNETT, executive officer of the department of anatomy, was named to the National Advisory Health Council. Dr. HANS NEURATH, biochemistry, to the Biochemistry Training Grant Committee; Dr. K. ALVIN MERENDINO, surgery, to the Surgery Study Section; and Dr. CHARLES EVANS to the National Advisory Cancer Council.

Dr. JOHN C. SHERRIS has been appointed director of the microbiology division of the laboratory of the University hospital and associate professor of microbiology.

Wayne State

In recognition of his "inspiring leadership," former students of Dr. GORDON B. MYERS have established an annual award in his name. The Gordon B. Myers award in Internal Medicine, $100 and a scroll will be given to the graduating senior who distinguishes himself in courses given by the department of medicine.

Dr. Myers is professor of medicine and heads the university service in internal medicine at Harper hospital. He was department chairman for 21 years.

Approval of a proposed affiliation agreement between Wayne State University and Sinai hospital has been given by the university's board of governors. With the acceptance of Sinai as an affiliate, the college of medicine now has three private Detroit hospitals available for all phases of teaching, research, and patient care.

Wisconsin

Two University of Wisconsin neurologists are in Russia for a 30-day tour of nerve research centers. Dr. FRANCIS M. FORSTER, chairman of the department of neurology, and Dr. CLINTON N. WOOLSEY, professor of neurophysiology, are among the six scientists whose trip is being sponsored by the National Institute of Neurological Diseases and Blindness. The mission, first in the field of neurology, was made possible by an agreement signed with Russia to permit such exchange visits in various fields.

Dr. HANS H. REESE of the neurology department was a member of a study group representing physicians from several states who were invited by the Federal Republic of Germany to a special study tour of German universities, including West Berlin. The program for the eight participating guests was prepared by the Public Health Division of the German Federal Ministry of the Interior at Bonn, and included undergraduate and postgraduate medical education and trends of researches in medicine.

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ITEMS OF CURRENT INTEREST

American Hospital Association

Inauguration of an American Hospital Association program to list in-patient care institutions other than hospitals was approved by the Association's board of trustees at a meeting held November 21, in Chicago. The board adopted the proposal to list such institutions as nursing homes, and also approved a statement and a release form on blood transfusions for Jehovah's Witnesses who object to the administration of blood on religious grounds. According to Dr. EDWIN L. CROSBY, the Association's director, the listing program will be carried out in the same manner as the listing program for hospitals. Primary purpose is a census of hospitals, not a measure of quality of care, Dr. Crosby said.

Smith Kline & French Laboratories

The establishment of an independent research organization in Great Britain to supplement the firm's own extensive Research and Development Division in Philadelphia, has been announced by Smith Kline & French Laboratories. It is their aim to provide the company with a direct link to European science. Heading the organization will be Professor WILLIAM A. BAIN, who has held the Chair in Pharmacology at the University of Leeds since that post was created in 1946.

Department of Health, Education and Welfare

A new research center for the study of drugs and their use in the treatment of mental illness was officially opened recently at Saint Elizabeth's Hospital, Washington, D.C. The project is operated jointly by Saint Elizabeth's and the Public Health Service's National Institute of Mental Health. Known as the Clinical Neuropharmacology Research Center, the project is being set up in the William A. White building and is being equipped for a comprehensive, scientific assessment of the tranquilizing and energizing drugs and their effects on mental function, particularly in the treatment of mental disorder.

Dr. JOEL J. ELKES, National Institute of Mental Health pharmacologist and former chairman of the department of experimental psychiatry at the University of Birmingham in England, is the director of the Center.

Atomic Energy Commission

The AEC will assist 30 American colleges and universities in equipping their laboratories for training in nuclear technology as related to the life sciences. Medical schools sharing in the $326,510 grant include Boston; Indiana; Minnesota; Puerto Rico; Temple; Albert Einstein; Texas-Southwestern Medical School and the University of California Medical Center (San Francisco).

MEND News

Capt. BENNETT F. AVERY, MEND National Coordinator, visited the University of Miami and Emory University during November, raising the total of schools visited since July to 11. Present planning is to visit as many of the 44 remaining MEND-affiliated schools of medicine as possible this year.

First of five MEND symposia in the current academic year will be held on January 19–21 at the Walter Reed Army Institute of Research, Washington, D.C. Entitled "Infectious Disease Problems," it will be presented by the Institute's Division of Communicable Disease for representatives of the 55 MEND-affiliated schools and other interested individuals.

Spaces for MEND-school representatives for "Management of Mass Casualties"

courses at the Army Medical Service School on February 9–13, and at the Walter Reed Army Institute of Research on February 16–21, were all filled by early November. A few spaces remain for the course on June 15–19 at the Army Medical Service School, Fort Sam Houston, Texas.

Department of the Air Force

Brigadier General HAROLD H. TWITCHELL, USAF (MC), was named president of The Association of Military Surgeons at the association's 65th annual convention held in Washington, D.C. recently. General Twitchell is Command Surgeon of the U.S. Air Forces in Europe at Wiesbaden, Germany.

Organized in 1891, the Association of Military Surgeons is devoted to the advancement of all phases of medicine as related to the federal services. It represents all aspects of and all professions in the medical services of each federal agency.

Mead Johnson Awards

The first Mead Johnson Awards for Graduate Training in anesthesiology were granted to physicians in Berkeley, Calif., Dallas, Texas, and Indianapolis, Ind. Receiving the first awards are: Dr. ROBERT D. WINSHIP, a resident physician at the University of California Hospitals, San Francisco; Dr. JACK A. GRAY, a resident physician in anesthesiology at Parkland Memorial Hospital; and Dr. THOMAS F. WOODEN, who will become a resident physician in anesthesiology at Indiana University Medical Center following completion of his army service.

PERSONNEL EXCHANGE

Faculty Vacancies

OBSTETRICS and GYNECOLOGY: Full-time Board eligible instructor for expanding Department Obstetrics and Gynecology in large midwestern university. Ample opportunity for research, teaching and clinical experience. Address: V-68.

FELLOWSHIP IN CARDIOVASCULAR DISEASE: Active participation in cardiac catheterization, cine-angiocardiography, phonocardiography and experimental surgical laboratories. Should have completed internship. Possible later incorporation into surgical or medical residency. Apply to J. G. Mudd, M.D., St. Louis University Hospitals, 1325 S. Grand Blvd., St. Louis 4, Mo.

OPHTHALMOLOGIST: Full-time assistant or associate professorship available in Eastern university medical school. Excellent opportunity for young man interested in academic career. Ample facilities, support and time for research. No private practice required. Address: V-70.

SENIOR PATHOLOGIST: Three hundred forty bed general teaching hospital and large diagnostic clinic, located in the East. All departments adequately staffed by full-time board certified M.D.'s. and Ph.D.'s. Please give full summary of qualifications when answering. Apply to Administrator, Guthrie Clinic-Robert Packer Hospital, Sayre, Pa.

ANESTHESIOLOGIST: Board qualified, to be in charge of midwest university hospital service. Active general, thoracic, and cardiovascular surgical program. Ample research and teaching opportunity, attractive salary. Address: V-71.

PEDIATRICIAN: Full time clinical teacher for department with active student and house staff educational program. Person interested in clinical teaching as a career desired. Considerable small group teaching with less emphasis on lectures. Rank and salary dependent on qualifications. Address: V-72.

VIROLOGIST and IMMUNOLOGIST: Research position in medical school for young Ph.D. interested in immunology and virology to cooperate in a research program as well as to pursue individual interests. Salary depends upon qualifications and experience. Opportunity for teaching. Address: V-73.

PSYCHIATRIC SOCIAL WORKERS: Active participation in clinical teaching and in expanding program of services in the department of psychiatry and in pediatrics-psychiatry clinic in eastern university medical school. Excellent opportunity for individuals interested in social work contribution in medical education. Qualifications: Master's degree with psychiatric sequence, and for senior positions experience in supervision or teaching, preferably in psychiatric clinical setting. Send curriculum vitae with application. Address: V-74.

PHYSIOLOGIST OR PHARMACOLOGIST: Teaching and research position in medical school. N.Y.C. area. M.D. or Ph.D. required. Training in neurophysiology desired. Salary based on qualifications and experience. Address: V-75.

PROFESSOR OF PREVENTIVE MEDICINE: The University of Alberta invites applications for the position of professor and head of the department of preventive medicine in the faculty of medicine. Duties will include administration of the department, teaching of graduate and undergraduate students and a program of research. Salary will be $10,000 per annum with consulting privileges. Interested applicants should send a complete curriculum vitae, names of three referees, and a recent photograph to the office of the Dean of Medicine, University of Alberta, Edmonton, Alberta.

PEDIATRICIANS: Two or 3 part-time teaching positions —may use remainder of time for private practice. Address: F. G. Gillick, M.D., Creighton University School of Medicine, Omaha 2, Nebraska.

PSYCHIATRISTS: Full-time and part-time teaching positions. Need coordinator of teaching grant program. Would function under departmental director. Address: F. G. Gillick, M.D., Creighton University School of Medicine, Omaha 2, Nebraska.

OPHTHALMOLOGIST and OTOLARYNGOLOGIST: Interesting opportunity for part time association with an active teaching program. Address: V-76.

To aid in solution of the problem of faculty vacancies, MEDICAL EDUCATION will list persons and positions available, as a free service. The school department or person may have the option of being identified in these columns or of being assigned a key number for each position listed. Mail addressed to key numbers will be forwarded to the person or department listing the request.

Information for these columns should reach the Personnel Exchange, Journal of Medical Education, 2530 Ridge Avenue, Evanston, Illinois, not later than the 10th of the month which precedes the month in which the listings will appear.

Personnel Available

PSYCHIATRIC SOCIAL WORKER: Female, single. Social Science and Administration Certificate, The London School of Economics and Political Science, England. Group work, B.S.W. University of Toronto, School of Social Work, Canada. Psychiatric Social Work, M.S.W. and Advanced Curriculum, Univ. of Pennsylvania. Experience in administration (United Nations). One year in residence in a State hospital followed by two years of clinical work in a university setting. Familiar with family centered teaching of medical students and residents. Desires faculty appointment. Available from September. Address: A-366.

MICROBIOLOGIST: Completing all requirements in September for the Ph.D. degree in Medical Parasitology, with a minor in Bacteriology and Immunology. Desires position in medical school teaching microbiology with opportunity for research. Address: A-367.

PATHOLOGIST: Age 44, certified C.P. and P.A. Academic background with extensive teaching experience. Particularly interested in medical and pediatric pathology. Organized and presently operating large department in university hospital. Desires to relocate in major city, east or west coast. Interested in combined teaching-service type practice in university or affiliated hospital. Address: A-368.

EPIDEMIOLOGIST: Age 30, M.D., M.P.H., requirements completed for Dr. P.H. Experience in obstetrics, student medicine, health department and chronic disease research. Desires teaching and research position in medical school department of public health and preventive medicine. Research in many fields; publications. Address: A-369.

MICROBIOLOGIST: Ph.D. Training, experience and publications in bacterial physiology (nucleic acid synthesis) and immunology or immuno-chemistry (antibody formation); several years teaching experience of medical students, nurses and technicians. Desires medical school or other academic position in teaching and/or research. Address: A-370.

NUTRITIONIST-BIOCHEMIST: Ph.D. Physician. Eight years experience teaching medical and graduate students. Associate professor in leading Eastern university. Numerous publications and membership in leading professional societies. Desires medical school position where there is available a combination of pre-clinical and clinical teaching with research facilities. Principal interest and experience in nutritional biochemistry and metabolism. Address: A-371.

PEDIATRICIAN-PSYCHIATRIC ORIENTATION: Age 34, certified, F.A.A.P. Five years of private practice. Desires academic position with opportunities for research in psychosomatic aspects of pediatrics. Available July 1959. Address: A-373.

ANATOMIST: Age 35, married. Desires change of position with more time for research, in Canada or U.S. Medical graduate of London Medical School and the English Royal Colleges. Also a London Ph.D. Has had extensive medical experience and surgical training before becoming an anatomist. Since then lectureship in a London school and Senior Lectureship and Readership for six years in a British overseas university. Has had responsibility for teaching, planning and administration. Publications in journals. Address: A-374.

ALLERGIST: Board eligible in medicine. Desires career type opportunity in teaching and research. Has basic training in immunology. Will consider full-time, geographic full-time and half-time opportunities. Address: A-375.

INTERNIST-BIOCHEMIST: Ph.D., M.D. Age 42. Desires opportunity to do research with some clinical work, interested in rheumatic diseases experienced teacher and investigator. Wide scientific background, including radioisotopes, publications. Address: A-376.

ROTATING INTERN: Age 26. Publication co-author. Desires faculty appointment in general surgery. Excellent references. Available July 1959. Address: A-377.

PEDIATRICIAN: Diplomate American Board of Pediatrics. Currently assistant professor; seeking a teaching position in a new location. Address: A-378.

ORTHOPEDIC SURGEON: British, age 36. F.R.C.S. (Edin.) F.R.C.S. (Eng.) Guy's Hospital Medical School, London. Publications, British Medical Journal. Eight years experience. Desires position in American medical school, preferably in orthopedic and traumatic surgery. Prepared to sit any necessary licensure or other examinations. Prefers settling in a maritime state with a warm climate. Address: A-379.

MICROSCOPIC ANATOMIST: M.D., male. Presently associate professor but desires change of locale to upper midwest or west for reasons of health. Seeking academic or research position in medical center or research laboratory. Address: A-380.

PHYSIOLOGIST: Ph.D., 1958, married, three children. Research in circulatory and respiratory physiology. Nine publications; teaching experience with medical and dental students. Desires teaching appointment in New England

or New York State, with opportunity for research. Address: A-381.

INTERNIST: Certified; age 33. University trained; currently on faculty of medical school with experience in private practice and industrial medicine. Desires position in teaching hospital with opportunity for clinical investigation in cardio-vascular diseases. Address: A-382.

INTERNIST: Female, age 32; Mayo trained with an interest in hematology. Desires teaching position. Address: A-383.

SURGEON: Age 33, certified general, experience in thoracic and extra-corporeal techniques. University training. Seeks full-time academic position with opportunity for research. Address: A-384.

BIOSTATISTICIAN: Seeking position as member of team in basic medical research or as lecturer to medical, dental, pharmacy and graduate students. Address: A-385.

PEDIATRICIAN: MPH, desires teaching and/or research position with clinical emphasis. Address: A-386.

ANATOMIST: Position wanted in university anatomy department in U.S., by married male with family. British medical school degree in medicine, extensive clinical experience, and recent teaching and research experience in anatomy in England. Good references available. Available to attend interviews in the U.S. now. Address: A-387.

OPHTHALMOLOGIST: Research scientist in field of vision and ophthalmology desires teaching position in Canada or U.S. Long experience in field and extensive publications. Contracts pending and in hand. Address: A-388.

OBSTETRICIAN-GYNECOLOGIST: Foreign physician, age 30, three years residency in Obstetrics and gynecology in teaching hospitals of U.S.A., with good command of English, desires position as preceptor in Ob-Gyn., starting July 1959. Address: A-389.

UROLOGIST: Foreign physician, age 30, one year internship, three years in urology and one in urological research in teaching hospitals of U.S.A. desires position as preceptor in urology, starting July 1959. Good command of English. Address: A-390.

THORACIC SURGEON: M.D. 1947, University of Istanbul. Served an internship in surgery (1954–55) Montana Deaconess Hospital, Great Falls, Montana. Served as Fellow in Thoracic Surgery (sponsored by American College of Chest Physicians) Knoxville, Tenn. Presently in charge of thoracic surgery department at Armenian Hospital, Istanbul. Desires teaching position in American medical School. Address: A-391.

PATHOLOGIST: Age 35, married. Certified PA 1955. Academic background and three years teaching experience. Wishes to relocate in West. Will consider part-time or full-time teaching appointment. Especially interested in surgical pathology. Address: A-392.

OTOLARYNGOLOGIST and HEAD and NECK SURGEON: Age 32; board eligible. University of the Philippines graduate. Completed five and one half years' training in eastern medical centers (3 years otolaryngology, 6 months more bronchoesophagology, and 2 years general and head and neck surgery). Desires one year fellowship, or assistantship, or academic position. Available August or October, 1959. Address: A-393.

BIOCHEMIST: Ph.D., age 30. Assistant professor of biochemistry desires academic position. Five years medical and graduate teaching experience. Membership in national societies, honors, grants, graduate students. Fifteen full-length publications. Research interests: enzymology, microbial metabolism and protein metabolism. Available July 1, 1959. Address: A-394.

PHYSIOLOGIST-PHARMACOLOGIST: Ph.D., 1954. Male, married, with family. Presently teaching physiology in dental school. Desires teaching position with research opportunities in physiology or pharmacology department. Address: A-395.

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